From: Barbery, Andrea
Location: WJC-North Room 3500
Importance: Normal
Subject: Meet & Greet (ECOS - OP)
Start Date/Time: Thur 12/21/2017 9:45:00 PM
End Date/Time: Thur 12/21/2017 10:00:00 PM

Purpose: For ECOS Officers to meet AA Dravis & other OP officials, and discuss priorities

Date: Thursday, Dec. 21, 2017

Time: 4:45 – 5:00 p.m. (Eastern)

State Participants:

- ECOS President **Todd Parfitt**, Director, Wyoming DEQ
- ECOS Vice President **Becky Keogh**, Director, Arkansas DEQ
- ECOS Secretary-Treasurer **Jim Macy**, Director, Nebraska DEQ
- ERIS President **David Paylor**, Director, Virginia DEQ
- ECOS Executive Director (and soon-to-be Region 1 Administrator) **Alexandra Dapolito Dunn**
- ECOS Deputy Director **Carolyn Hanson**

EPA Participants:

- Samantha Dravis, Associate Administrator, Office of Policy
- Robin Kime, Chief of Staff, OP
- Drew Feely, Senior Counsel, OP
- Bill Nickerson, Acting Director, OP/Office of Regulatory Policy and Management
- Rob Tomiak, Director, Office of Federal Activities

- Matt Tejada, Director, Office of Environmental Justice
- Matt Dalbey, Director, OP/Office of Sustainable Communities
- Nena Shaw, Sectors Team, OP
- Will Lovell, Policy Advisor, OP

POC: Andrea Barbery (EPA/OCIR), 202-564-1397

From: Delahoyde, Magdelana A. EOP/WHO
Location: Cordell Hull, EEOB 208 (WAVES link and Call-in info located in Calendar notes)
Importance: Normal
Subject: NADA CAFE-GHG
Start Date/Time: Thur 12/7/2017 10:00:00 PM
End Date/Time: Thur 12/7/2017 11:00:00 PM

Meeting will be with the National Auto Dealers Association.

All WAVES information is being carried over to the new time and date, so no need to re-enter.

WAVES link: https://events.whitehouse.gov/?rid=32CCKBXRM6

Host Dial-In: (202) 395-6392
Leader Code: 137 0583
Participant Dial-In: (202) 395-6392
Participant Code: 442 5615

From: Kime, Robin
Location: Lobby of Trump Hotel
Importance: Normal
Subject: Coffee with Andrew Rafferty
Start Date/Time: Tue 11/14/2017 8:30:00 PM
End Date/Time: Tue 11/14/2017 9:00:00 PM

Please contact kime.robin@epa.gov with any changes to this appointment. Thank you.

From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: Meeting with PotashCorp (PCS)
Start Date/Time: Tue 11/14/2017 7:00:00 PM
End Date/Time: Tue 11/14/2017 7:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: We represent PotashCorp, the largest fertilizer company in the world producing potash, nitrogen and phosphate. Its subsidiary PCS Phosphate, has two phosphate mines in the US, one of which is located in Aurora, North Carolina. This meeting will address the *Phosphoric Manufacturing and Phosphate Fertilizer Production RTR and Standards of Performance for Phosphate Processing, 80 Fed. Reg. 50386 (August 19, 2015)*.

Attendees:

Edward Newberry, Karen Winters and Jessica DeMonte

Contact:

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From: Kime, Robin
Location: The Williard
Importance: Normal
Subject: Update with Noel
Start Date/Time: Tue 11/7/2017 10:00:00 PM
End Date/Time: Tue 11/7/2017 10:30:00 PM

Contact:

nwblack@southernco.com or 202.578.8337

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: AGA and NGVA Regulatory Reform Discussion Focusing on the Subpart W Reporting Rule and the PCB Rules
Start Date/Time: Fri 11/3/2017 7:00:00 PM
End Date/Time: Fri 11/3/2017 7:30:00 PM
AGA 05 15 2017 Comments on EPA Rule Review Docket EPA-HQ-OA-2017-0190.pdf
NGVA EPA Regulatory Review May 2017 Final.pdf

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Kathryn Clay, Allison Cunningham and Pamela Lacey

Request: The American Gas Association (AGA) and Natural Gas Vehicles of America (NGVA) would like to arrange a follow-up meeting with you to discuss our ideas for regulatory reform, as described in our attached comments, filed May 15, 2017 in Docket EPA-HQ-OA-2017. AGA's comments address several programs, but at this meeting, we will want to focus on revisions we have suggested to improve: (1) the Subpart W reporting rule and (2) the PCB rules.

Contact:
Pamela A. Lacey | Chief Regulatory Counsel
American Gas Association<http://www.aga.org>

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Electronic Filing: www.regulations.gov

May 15, 2017

Ms. Samantha Dravis
Senior Counsel and Associate Administrator for Policy
Regulatory Reform Officer for Executive Order 13777
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Identification of Regulations for Repeal, Modification or Replacement under Executive Order 13777, 82 Fed. Reg. 17793 (April 13, 2017) (EPA Request for Comment) -
Docket No. EPA-HQ-OA-2017-0190

Dear Ms. Davis:

The American Gas Association (AGA) appreciates the opportunity to suggest how certain EPA regulations could be repealed, modified or replaced to better serve EPA's mission, while reducing unnecessary duplication and burdens that divert resources from infrastructure projects and ongoing maintenance and upgrades needed to ensure the safe reliable delivery of energy. A more efficient approach will help achieve EPA's environmental goals in a less burdensome manner, and it will allow our members to channel more resources to improve their systems and increase good-paying, career utility jobs that sustain middle class families in communities across the country.

The American Gas Association, founded in 1918, represents more than 200 local energy companies that deliver clean natural gas throughout the United States. There are more than 73 million residential, commercial and industrial natural gas customers in the U.S., of which 95 percent — more than 69 million customers — receive their gas from AGA members. AGA is an advocate for natural gas utility companies and their customers and provides a broad range of programs and services for member natural gas pipelines, marketers, gatherers, international

natural gas companies and industry associates. Today, natural gas meets more than one-fourth of the United States' energy needs.

I. Air Office – Revise 40 C.F.R. Part 98 Subpart W and Repeal Subpart NN

A. Revise Subpart W to Reduce Unnecessary Burdens and Improve Accuracy:

The Subpart W Reporting Program is providing value to AGA members as a source of credible data to demonstrate their progress in reducing emissions. However, several revisions are needed to improve the accuracy of the data and to eliminate unnecessary cost burdens that divert resources from more productive, job-creating energy projects. We believe a few simple changes can achieve this goal.

1. Replace Unnecessary Leak Surveys with Emission Factors Based on Robust Data:

Companies in the natural gas industry have conducted annual Subpart W leak surveys of equipment since 2011, and now have a robust set of data that could be used to establish updated emission factors. While natural gas operators will of course continue to perform leak detection and repair to ensure safety - as required pursuant to Department of Transportation (DOT) pipeline safety regulations and related state requirements - there is no value or benefit in performing duplicative surveys using different timing and criteria for Subpart W. The surveys were originally required because EPA lacked data on certain emission sources. The costly Subpart W surveys can now be replaced with a simple arithmetic calculation using emission factors based on data collected to date. An emission factor approach for calculating GHG emissions is common for many sources in Subpart W, as well as other industries that report under the Part 98 reporting program.

This change should be made to eliminate, for example, Subpart W leak surveys under 40 C.F.R. 98.233(q) for natural gas Transmission to Distribution pressure reduction stations (T-D transfer stations), Liquefied Natural Gas (LNG) import-export terminals, peak-shaving LNG storage facilities, and transmission compression facilities. Instead of continuing these costly annual surveys, EPA should establish default emission factors based on the past six years of

reporting data, with an option for companies to use their own company-specific emission factors based on their own past Subpart W leak survey data.

Similarly, transmission compressor station and underground storage operators are required to conduct annual leak measurements under 40 C.F.R. 98.233(o) and (p) for reciprocating and centrifugal compressors, and under 40 C.F.R. 98.233(k) for scrubber dump valve leakage through condensate storage tank vents. These costly annual surveys should be replaced with default emission factors based on the past six years of reporting data, with an option for companies to use their own company-specific emission factors based on their own past Subpart W leak survey data. The leak survey requirement for other compressor station or storage facility components required under 40 C.F.R. 98.233(q) should also be replaced with emission factors.

*2. **Improve Accuracy by Updating Emission Factors to Reflect Current Practices:***

To improve the accuracy of Subpart W data, EPA should update the default emission factors promptly as new, reliable scientific data becomes available. For example, Subpart W should use the same updated emission factors for natural gas distribution pipe as are already adopted for use for the annual EPA Inventory, based on the peer-reviewed study by Dr. Brian Lamb at Washington State University (WSU) published in the Journal of Environmental Science & Technology (March 2015). It is inaccurate and, frankly, misleading to continue overestimating natural gas emissions by using emission factors developed in a study conducted more than 20 years ago that evaluated a much smaller data set and reflected emissions from equipment and practices that have changed and improved dramatically since 1992. Additional robust data is expected to be available in 2018 from a series of studies co-funded by industry and Department of Energy (DOE). The Subpart W default emission factors should be updated as that new data becomes available.

As to the emission factor for metering and regulating (M&R) equipment in particular, there is also no legitimate reason to continue applying an outdated and highly-inflated emission factor to this equipment. At least in the past, EPA appears to have been under the impression that M&Rs emit more if they are located below grade rather than above grade. Modern

measurement data demonstrates this is not true. The same type of equipment is used in both above and below grade M&Rs and their emissions are far lower than the outdated default emission factor implies. EPA already allows up-to-date, company-specific emission factors for above grade M&Rs. The agency should allow the same updated emission factor for below grade M&Rs – based on the past six years of Subpart W emission surveys.

3. Eliminate Subpart W Throughput Reporting:

EPA should delete the recently added requirements in 40 C.F.R. Part 98, § 98.236(aa)(9) to report the quantity of natural gas received, delivered, stored, consumed and stolen. This provides no useful data for the purposes of Part 98 and duplicates natural gas throughput reporting under Subpart NN, which in turn already duplicates reporting to the DOE Energy Information Administration (EIA), as we note below.

B. Eliminate Throughput Reporting under Subpart NN:

EPA should review Subpart NN and consider, in a notice and comment rulemaking, whether to repeal it. At a minimum, Subpart NN reporting of natural gas deliveries to customers should be eliminated for natural gas distribution companies (LDCs), as this largely duplicates data companies are required to report to the DOE EIA and serves no useful purpose. The volume of natural gas delivered to customers in any year is mainly a function of annual weather fluctuations (i.e. colder or warmer winters), not commercial or industrial process changes.

II. Water Office

Review and Revise Waters of the U.S. Rule:

The Administration has already initiated a review of the federal rule defining the scope of waters of the United States (WOTUS). We want to emphasize the need for a revised rule that provides a clear dividing line between water features that are or are not subject to federal jurisdiction – without the need for subjective, arbitrary and unduly burdensome case-by-case

decisions that can delay natural gas utility and pipeline projects, impede job creation, impede economic development projects to be served by the pipeline, and increase costs.

III. OEM - Federal Standards for Aboveground Storage of Hazardous Substances

AGA is a member of the Utility Solid Waste Activities Group (USWAG), and we support USWAG's request that the Office of Emergency Management (OEM), within EPA's Office of Land and Emergency Response (OLEM), should avoid duplicative, unnecessary or proscriptive requirements in the pending federal standards for the aboveground storage of hazardous substances. This rulemaking is of interest to AGA because it could adversely affect operations for natural gas utilities. We agree with USWAG that any such regulatory program should allow for performance-based controls, as a more prescriptive approach could harm job creation, impose unnecessary burdens, and/or impose costs that exceed benefits.

IV. ORCR – Revise RCRA Generator Requirements for Remote Sites

AGA also agrees with USWAG that EPA should revise a recent final rule regarding hazardous waste generator requirements that imposed many stringent changes without commensurate improvements in environmental safety. The rule originated in OLEM's Office of Resource Conservation and Recovery (ORCR).[1] Of particular c oncern for natural gas utility operations is a provision in the preamble of the rule in which EPA "clarified" that states were not permitted to provide relief for the consolidation of hazardous wastes from remote or unstaffed sites. As USWAG notes, EPA provided limited relief for this type of consolidation in the final rule and then contended that state programs that had provided other types of commonsense relief for the same concerns were not permitted under the hazardous waste regulations[2]. This is highly disruptive for utility operations, particularly given that severalstates have already provided relief by allowing unknown wastes to be collected and consolidated from remote sites and postponing

[1] 81 Fed. Reg. 85732 (Nov. 28, 2016).
[2] *Id.* at 85776.

hazardous waste determinations until the waste is received at a staffed facility, or by authorizing the direct transfer of hazardous waste to central locations. A similar problem arises in the preamble where EPA suggests that the relief the rule offers is the only available for episodic generation events, when in fact, some states have used their enforcement discretion to address abnormal hazardous waste generation patterns. We urge EPA to acknowledge and encourage the availability of state programs, such as the ones mentioned above, that achieve equivalent environmental protections in a far more practical and cost-effective manner. This would be consistent with the role of RCRA-delegated states as the primary regulator for facilities located within their jurisdictions.

V. OPPT & ORCR - Revise and Simplify Federal PCB Regulation

EPA should review, revise and simplify certain provisions in the federal regulations governing the use, remediation and disposal of polychlorinated biphenyls (PCBs). The PCB regulations adopted in 1998[3] under 40 C.F.R. Part 761 were tailored to the agency's understanding of interstate pipelines, not natural gas local distribution systems, and are long overdue for modernization and simplification.

Under the Toxic Substances Control Act (TSCA) Section 6(e) (15 U.S.C. § 2605(e)), the use of PCBs other than in a "totally enclosed manner" was banned after 1977 except as authorized by EPA regulatory action. EPA included a use authorization with respect to PCBs in pipeline systems because an EPA-commissioned human health risk assessment in 1984 demonstrated the PCBs in enclosed pipelines do not pose an unacceptable risk to human health. PCBs were used in the last century as a fire retardant to improve safety in some products such as compressor lubricants and electric transformer fluid, but their manufacture and purchase ended in the last century. Their occasional presence and discovery makes it appropriate for EPA to maintain some form of "use authorization," but this can be

[3] The so-called "PCB Mega Rule" in 1998 was last significant amendment to the PCB regulations. See 63 Fed. Reg. 35384 (June 29, 1998).

accomplished in a less burdensome manner, especially for operators that did not originally introduce PCBs into their own systems, but rather received them from an upstream source.

The use authorization rule is now a relic of a former time, and the rule makes even less sense now than it did originally. EPA staff have recognized this and have suggested they may consider a new approach – replacing the old rule with a very simple authorization for the presence of PCBs in natural gas utility and pipeline systems, provided the operator follows reasonable requirements for managing and disposing of PCBs when they are discovered.

The use authorization rule for natural gas systems, administered by the Office of Pollution Prevention and Toxics ("OPPT") within EPA's Office of Chemical Safety and Pollution Prevention ("OCSPP") could be boiled down to a few words, eliminating significant and completely unnecessary cost burdens and complexity, as we explain below. The disposal and remediation rules in Part 761 are generally more risk-based and functional, but they too could be improved to eliminate some provisions that impose severe and unnecessary costs. Because the use authorization and disposal rules are interrelated but administered by two different offices at EPA, their revision should be coordinated. In fact, pursuant to Executive Order 13781 (March 13, 2017) establishing a comprehensive plan for reorganizing the Executive Branch, it would make sense to reduce confusion and duplication by consolidating the two functions and moving any remaining use authorization issues into one PCB use, remediation and disposal group within the Office of Resource Conservation and Recovery (ORCR) under the Office of Land and Emergency Management (OLEM).

A. Revise and Simplify PCB Use Authorization

Having a simple yet effective PCB use authorization is important to affected natural gas companies as they continue to rid their systems of PCBs over time. The existing use authorization rules governing PCBs in natural gas systems, however, are replete with vague, confusing, cumbersome, burdensome and irrational provisions, particularly for local natural gas distribution utilities. The confusion stems in part from trying to create natural gas regulations on a foundation of electrical equipment regulations developed 40 years ago, when in fact, the

use of PCBs in electric and gas systems was completely different. The confusion in the 1998 natural gas regulations also stems from the fact that EPA developed the regulations based on the agency's partial understanding of the interstate natural gas transmission pipelines where PCBs were discovered by EPA, and a complete misunderstanding about how local distribution systems operate. For example, the existing rule was drafted based on an incorrect assumption that both transmission and distribution systems are comprised of straight, level pipelines that flow in only one direction for many miles. Another misunderstanding that has caused serious confusion and excessive costs relates to the "source" of legacy PCBs in systems. A local distribution company that did not introduce PCBs into its own system, but rather received PCBs from an upstream interstate pipeline, does not have a source of PCBs in its system, yet it can become subject to the unduly burdensome use authorization requirements to eliminate "sources" that do not exist under such circumstances. These and other problems related to the use authorization rule have been compounded as local distribution systems have modernized and grown since 1998.

We encourage EPA to repeal the current use authorization regulations in 761.30 and replace them with a simple statement that liquid and non-liquid PCBs and PCBs in porous surfaces are authorized for use at any concentration in electric utility, natural gas distribution utility, storage and pipeline systems and operations, provided the operator complies with applicable requirements for PCB remediation, storage and disposal under Sections 761.60, 761.60, 761.61, 761.65, and 761.120 as PCBs are removed and eliminated from pipeline systems over time. We also urge EPA (1) to eliminate any reference to "potential sources,"[4] (2) clearly eliminate any flawed concept that devices designed to remove liquids (and PCBs if present) from natural gas systems somehow reintroduce them, and (3) eliminate extensive, unnecessary procedures for "characterizing" natural gas systems to look for PCB deposits today -- long after they were first introduced more than 50 years ago. Resources should instead be focused on responding appropriately and reasonably when any remaining PCBs are found.

[4] *See* 40 C.F.R. § 761.30(i)(1)(iii)(A).

Requirements for such response and disposal should be based on standard best practices that are self-implementing and clearly described in the rule, to eliminate the need for any EPA involvement in day-to-day operations.

B. Revise Certain PCB Analysis, Storage and Disposal Regulations

1. Change PCB Rules to Facilitate Gas & Electric Utility Operations

AGA agrees with USWAG that EPA should: (1) allow disposal of PCB remediation wastes at "as-found" levels <50 ppm in non-TSCA landfills; (2) modify the PCB analytical rules at 40 C.F.R. § 761.272 to expressly authorize the use of the automated soxhlet extraction procedure (Method 3541) for the chemical extraction of PCBs from individual and composite samples; and (3) amend 40 C.F.R. § 76165 to allow satellite accumulation of PCBs.

2. Change Storage and Disposal Rules to Facilitate Natural Gas Utility Operations

a. Reduce Costs by Allowing Rational Method to Identify Areas Not Subject to PCB Concerns and Disposal Restrictions

EPA's PCB disposal rules under Section 761.60 describe how to characterize and manage natural gas distribution and transmission pipelines from PCB-impacted systems when no longer fit for service, including restrictions on how pipe can be abandoned in place or disposed of, depending on PCB levels.[5] Pipe removal and replacement are becoming more common in response to DOT pipeline safety regulations, so the cost of complying with the PCB regulations for natural gas systems continues to rise while PCB levels continue to decline.

Natural gas companies strive to rid their systems of liquids in general and PCBs in particular to eliminate these added costs. However, it is not clear under the existing rules how an operator can "delist" a system or portion thereof from the costly and onerous pre-requisites for abandoning pipe in place. Nor are the rules clear regarding how and where to send pipe for disposal or recycling once PCBs are no longer found in the system or a portion thereof above the regulatory threshold. It is wasteful and very costly to continue applying restrictions designed for systems with PCBs in liquids to dry pipe that has salvage value and no longer poses a risk. Testing each section of pipe as it is taken out of service in such systems is also costly and

[5] See 40 C.F.R. § 761.60(b)(5).

wasteful. We would welcome the opportunity to work with EPA to develop a rational method for "delisting" systems or portions of systems that actually results in some incremental environmental benefit, so that resources can be focused on projects that improve safe and reliable energy delivery, create good paying utility jobs, and facilitate economic development.

b. Allow PCB Bulk Product Waste Storage or PCB Bulk Remediation Waste for Storage Up to 180 Days -- in a Roll-Off or Similar Container -- at Either the Site of Generation or Other Company-Owned Site

Pipe wrap and cathodic protection are two effective methods that have been used over the years for protecting metal pipe from corrosion. Coal tar pipe wrap was often used on steel and cast iron pipe for gas utility systems in the first half of last century. Sometimes oil containing PCBs was applied to the wrap to improve its flexibility. Gas utilities have been removing and replacing cast iron pipe over recent years as they modernize their systems, and they sometimes encounter sections of coal tar pipe wrap that contain PCBs at concentrations of $\geq$ 50 ppm. In such cases, utilities need a cost-effective method for managing this waste.

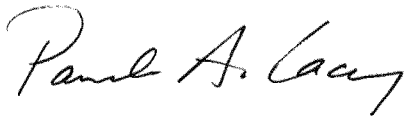
AGA agrees with USWAG that PCB-containing Coal Tar Wrap (CTW) material meets the definition of "PCB bulk product waste" under 40 C.F.R. § 761. 3. The existing PCB storage regulations at 40 C.F.R. § 761.65(c)(9) allow temporary storage of PCB bulk product waste or PCB bulk remediation wastes at the site of generation for up to 180 days , but only in a "pile" that meets several restrictive performance standards. A better, simpler and more cost -effective option in many circumstances would be to use a roll -off or similar container. AGA agrees with USWAG that the rule should be amended to allow the use of a roll-off or similar container.

Further, since the site of generation could be in a city street or utility right -of-way, it is often not feasible or the best environmental option to store bulk PCB remediation wastes or bulk PCB product wastes there. It is often more practical an d environmentally sound to bring such bulk wastes back to a utility service center or other company -owned central site. The existing regulations at 40 C.F.R. § 761.65(c)(1) allow operators to move PCB bulk product waste or PCB remediation waste from the site of generation back to a company -owned site for temporary storage before shipment off -site to a qualifying TSCA disposal facility – but such temporary storage at a company-owned central site (other than the site of generation) is limited to only 30

days. This short time period often does not allow adequate time for cost-effective storage prior to off-site shipment. For the reasons explained in USWAG's comments in this docket, extending this time period would not present an unreasonable risk of injury to health or the environment. EPA should amend its storage for disposal regulations at 40 C.F.R. §761.65 to expressly authorize operators to move PCB remediation wastes and PCB bulk product wastes such as CTW or pipe covered with CTW from remote sites to a central company-owned location for storage up to 180 days.

AGA appreciates the opportunity to comment. If you have any questions, please contact me.

Respectfully Submitted,



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May 15, 2017

Ms. Samantha Davis
Senior Counsel and Associate Administrator for Policy
Regulatory Reform Officer for Executive Order 13777
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Identification of Regulations for Repeal, Modification or Replacement Under Executive Order 13777, 82 Fed. Reg. 17793 (April 13, 2017) (EPA Request for Comment) - Docket No. EPA-HQ-OA-2017-0190

Dear Ms. Davis:

NGVAmerica appreciates the opportunity to provide comments on the U.S. Environmental Protection Agency's regulatory review effort announced on April 13, 2017.

NGVAmerica is a national trade association dedicated to creating a profitable, sustainable and growing market for compressed natural gas, liquefied natural gas, and renewable natural gas powered vehicles. NGVAmerica represents more than 200 companies, including vehicle manufacturers; natural gas vehicle component manufacturers; natural gas distribution, transmission, and production companies; natural gas development organizations; non-profit advocacy organizations; state and local government agencies; and fleet operators.

The United States is the world's largest producer of clean-burning natural gas. The abundance of this domestic resource means that it is a clean, low-cost, stable energy source that can secure America's energy needs for decades to come. Using more domestic natural gas results in expanded job opportunities for workers that produce this fuel and it also provides cost-savings for the consumers and businesses that consume this fuel. It also adds much needed revenue to the state budgets in areas of the country where natural gas is produced.

To expand the opportunities for using this domestic fuel here in the U.S., more should be done to ensure that the right types of incentives and common sense regulations govern its use in the transportation sector. Using compressed natural gas (CNG), liquefied natural gas (LNG), and renewable natural gas (RNG) in transportation can displace demand for imported energy and deliver the lowest emissions among all fuels.

17cv01906 Sierra Club v. EPA ED_001523_00005461-00001

NGVAmerica offers the following comments relating to the regulation of natural gas vehicles. The requested regulatory and policy changes are intended to remove unnecessary impediments to the increased use of natural gas vehicles and domestic natural gas resources and, if adopted, will promote job creation, clean air, reduced emissions of greenhouse gases, and improved energy security.

I. Amend the Driving Range Requirements for NGVs to provide fair treatment relative to other technologies, and to provide additional incentive for manufacturers to produce natural gas vehicles

EPA should remove the requirements in 40 CFR § 600.510–12, *Calculation of average fuel economy and average carbon-related exhaust emissions*, part (c)(2)(vii)(B) for fuel economy and (j)(2)(vii)(B) for emissions, that require NGVs to have a driving range on natural gas that is two times the driving range on gasoline or diesel fuel. This requirement is wholly impractical as it would require automakers to install significantly larger and more expensive natural gas fuel systems on dual-fuel vehicles, or alternatively require automobile manufacturers to reduce the size of gasoline fuel systems installed on dual-fuel NGVs, to access the utility factors available to other vehicles. This latter requirement would impose significant costs as it would require the design and manufacturer of smaller gasoline tanks and changes in the assembly production of base gasoline vehicles to fit vehicles with unique gasoline tanks.

NGVAmerica previously petitioned EPA to remove this requirement but to date EPA has not acted on this petition. We would again urge EPA to revisit this issue and amend its regulations accordingly by removing this burdensome and unnecessary requirement. Amending the rules as requested would level the playing field with other technologies and increase the incentive for manufacturers to offer more light duty NGVs. It also could be expected to encourage manufacturers to begin to commercial new low-pressure and absorbed natural gas systems.

NGVAmerica wishes to indicate its support for separate comments submitted by VNG.CO addressing this same issue, and would appreciate an opportunity to provide additional information in support of this request.

II. Amend the marine engine certification requirements for dual-fuel natural gas engines so that compliance is based on the intended use of these engines and recognizes that when operating on natural gas/diesel mixtures these engines comply with and exceed the Tier III requirements. 40 CFR Part 1042 – Control of Emissions from New and In-Use Marine Compression-Ignition Engines and Vessels.

Natural gas, including liquefied natural gas, holds significant potential to displace petroleum as marine fuel and reduce emissions of harmful pollutants. Today, there are over 200 LNG ships in operation and on order. About 15 percent of new orders for these ships will operate in the US waters. There is growing interest in using LNG because it is a virtually sulfur free fuel and offers a significant reduction in particulates and NOx emissions compared to conventional marine fuels. LNG also provides a reduction in greenhouse gas emissions. In addition to the environmental benefits, encouraging the use

of more LNG as a fuel for marine vessels will lead to new economic development as bunkering facilities, ships and other fueling infrastructure are built to support this market.

In the US, Tier III NOx requirements are in effect for all category 3 new built vessels (range in size from 2,500 to 70,000 kW (3,000 to 100,000 hp) – large engines that propel ocean-going vessels such as container ships, oil tankers, bulk carriers, and cruise ships). The more demanding NOx emission levels required by the Tier III regulation is readily met by ships when they operate on LNG. In fact, using LNG results in NOx emissions that are well below required levels. To use LNG, most marine vessels rely on dual-fuel operation, which here refers to operation on a mixture of LNG and diesel fuel in a diesel cycle or compression-ignition engine.

The problem today is that the Tier III emission regulations do not distinguish between fuel types, or provide any allowance for dual-fuel engines that operate on mixture of LNG and diesel fuel. The regulations therefore require that these vessels meet the NOx emission levels on both fuels including when operating on 100 percent diesel fuel even though that is not how the dual-fuel engines are intended to operate. The result is that manufacturers must equip their dual-fuel natural gas/diesel engines with expensive after-treatment equipment (Selective Catalyst Reduction – SCR – Technology) that is not necessary to achieve the required emission levels. Installing SCR systems on these vessels adds an additional cost of 1 - 2 million dollars per ship, even for ships utilizing diesel only for ignition purposes and whose fuel use is primarily LNG.

While the number of LNG powered vessels is growing, economies of scale are not yet reached, and the expertise and knowledge in building these ships is still fledgling, especially in the US/Jones Act vessels. The fact that ship builders must install costly SCR systems can and does discourage the development of the market for LNG ships and the use of natural gas in the marine market.

NGVAmerica requests that EPA amend it rules to allow a waiver for dual-fuel engines that operate the majority of the time on LNG and that have demonstrated through testing that they meet the Tier III NOx regulation when operating as intended (e.g., 70%NG/30% diesel or 90%NG/10% diesel). Providing this waiver will stimulate growth and jobs in shipbuilding in the US and encourage a faster paced adoption of cleaner-burning natural gas in this market.

III. Amend the DERA Program to remove scrappage requirement for replacement vehicles that exceed current federal standards by 50% or more for NOx emissions

This issue concerns EPA guidance for the Diesel Emission Reduction Act (DERA) Program. Current guidance provides additional funding (i.e. 35% instead of 25%) for the cost of new replacement vehicles that have been certified to optional low-NOx standards. Thus, the program provides a larger incentive for cleaner engines. NGVAmerica strongly supports this provision as it currently stands but also urges EPA to expand the incentive for low-NOx engines by providing a larger incentive, or by removing the scrappage requirement.

The DERA program seeks to ensure emission reductions by removing older, dirtier equipment from operation. The removal of more polluting equipment is ensured by requiring scrappage of vehicles and engines. Assuming equipment is retired earlier than it otherwise would be the case, this essentially locks in excess emission reductions. Scrappage however comes at a cost for businesses that lose the opportunity to sell their equipment and receive compensation for the remaining value. For new diesel vehicles, it can be argued that providing 25 percent incentive for the cost of new replacement vehicle is more than sufficient to offset the economic loss associated with scrappage, and still provide an incentive to encourage the purchase of new, cleaner vehicles.

For natural gas vehicles, however, the DERA incentive of 25 percent or even 35 percent for the cost of a new vehicle is not sufficient to cover the economic loss associated with scrappage and the added costs associated with new natural gas trucks, which, like other advanced technology vehicles, cost more than conventionally fueled diesel vehicles. To remedy this situation, we would urge EPA to consider providing an even larger incentive for natural gas low-NOx vehicles. This could include providing 50 percent of the purchase for low-NOx alternative fuel trucks, or removing the scrappage requirement for low-NOx trucks. Such a policy would align with the DERA intent by delivering additional emission reductions because low-NOx engines are 50 – 90 percent cleaner than required.

IV. Amend the testing and sampling requirements for cellulosic fuel produced in anaerobic digesters to be less burdensome and encourage increased production of qualifying cellulosic fuel

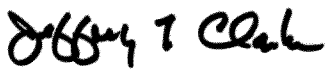
Renewable natural gas produced from a variety of feedstocks has proved to be a huge success story, and today accounts for a significant portion of natural gas used to fuel natural gas vehicles. This clean-burning, low-carbon fuel accounts for more than 20 percent of all on-road natural gas demand and is expected to account for more than 40 percent of on-road demand by 2018. The success of renewable natural gas is due in no small part to the inclusion of various incentives and regulatory programs that encourage the production of this fuel including the U.S. EPA's Renewable Fuel Standard (RFS) Program.

To expand the opportunity for renewable natural gas and remove burden on industry, NGVAmerica requests that EPA address the sampling and testing requirements required for anaerobic digesters (AD) that process crop waste to produce cellulosic fuel. AD producers have indicated that the testing requirements to demonstrate that 75 percent of the feedstock used in these facilities is cellulosic based are too burdensome and therefore discourage the production of more cellulosic qualifying fuel. Specifically, we request a change in the testing requirements found in 40 CFR 80.1426 so that instead of requiring the testing of every truck load that is delivered to an AD facility, that the testing is instead done quarterly and on random samples.

Conclusion

NGVAmerica appreciates the opportunity to provides these comments and would welcome the opportunity to discuss these issues further with EPA as it moves forward with its regulatory review. In addition to the comments offered here, NGVAmerica would like to offer its support for the comments submitted in the docket by VNG.CO, which address several other issues related to the certification of light duty vehicles that are not included in our submission but nevertheless we strongly support. We believe that the changes requested will provide more fair treatment for NGVs and level of the playing field with other transportation technologies, and thereby increase the use of domestic natural gas as a transportation fuel.

Sincerely,



17cv01906 Sierra Club v. EPA ED_001523_00005461-00005

From: Kime, Robin
Location: Trump Hotel Lobby
Importance: Normal
Subject: Coffee with Lesley (2:15 p.m.)
Start Date/Time: Thur 11/2/2017 6:15:00 PM
End Date/Time: Thur 11/2/2017 6:45:00 PM

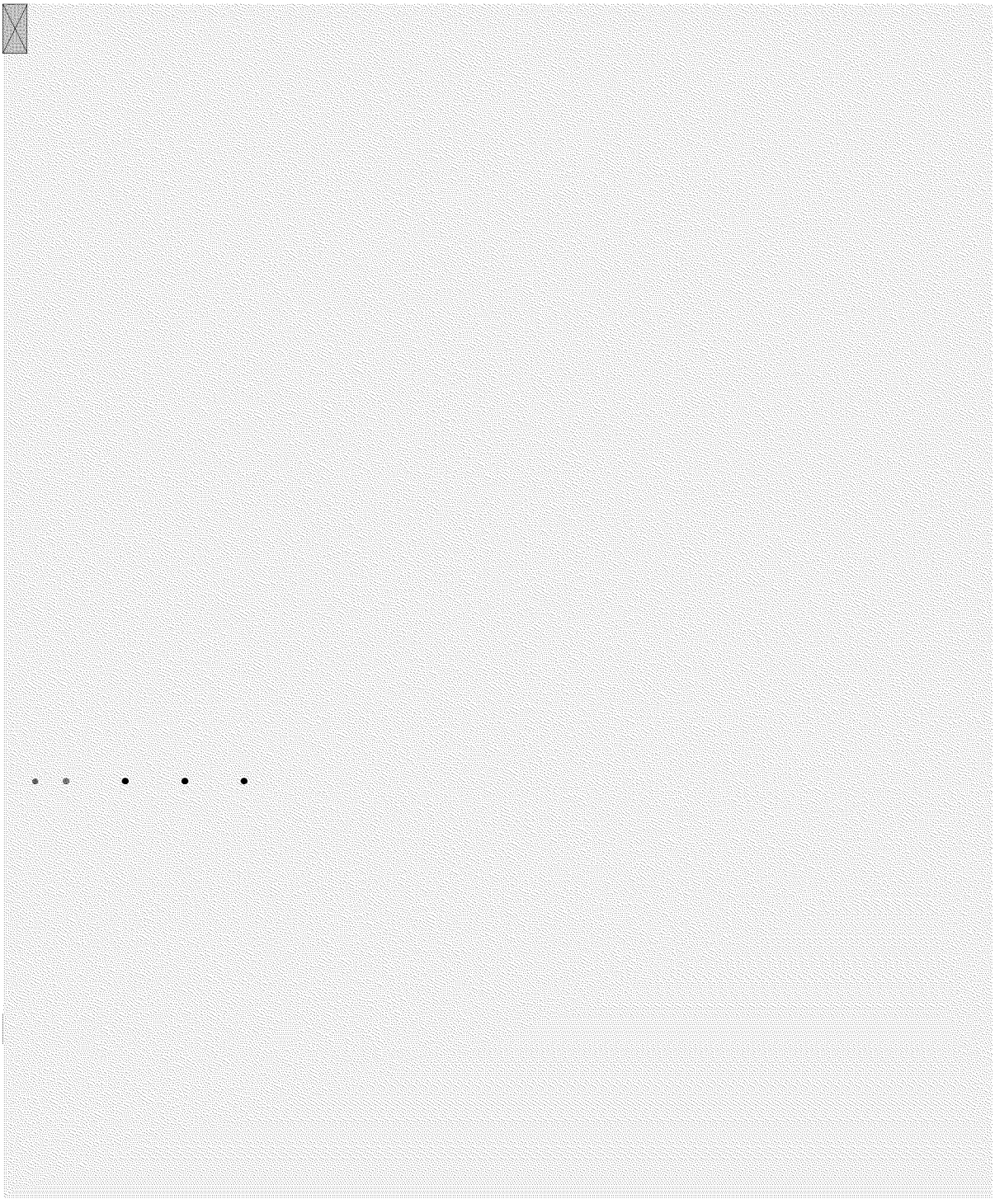
From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: Meeting with John Walke
Start Date/Time: Mon 12/11/2017 4:30:00 PM
End Date/Time: Mon 12/11/2017 5:00:00 PM

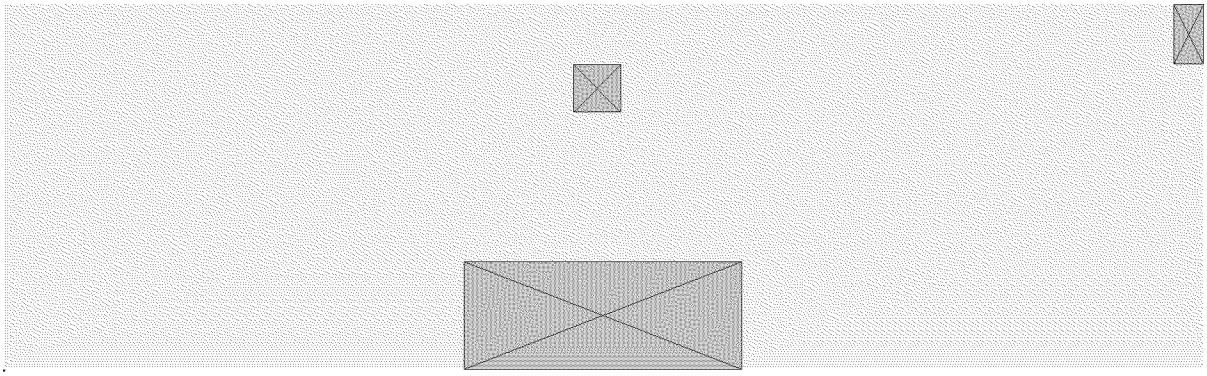
Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact: Walke, John <jwalke@nrdc.org>

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: ECOS
Sent: Wed 9/20/2017 3:18:33 PM
Subject: Speakers Announced for ECOS' Webinar on Cooperative Federalism 2.0: A Deeper Look into a Rebooted EPA-State Relationship





From: Microsoft Outlook
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting Forward Notification: Regulatory Priorities Meeting - Call: 1-855-564-1700; Ext: 1104438; Participant Code: 234567
Start Date/Time: Wed 9/27/2017 2:00:00 PM
End Date/Time: Wed 9/27/2017 2:45:00 PM

Your meeting was forwarded

Inge, Carolyn has forwarded your meeting request to additional recipients.

Meeting

Regulatory Priorities Meeting - Call: 1-855-564-1700; Ext: 1104438; Participant Code: 234567

Meeting Time

Wednesday, September 27, 2017 10:00 AM-10:45 AM.

Recipients

Greenwalt, Sarah
Gunasekara, Mandy
Brown, Byron
Baptist, Erik
Beck, Nancy
Forsgren, Lee
Davis, Patrick
Fotouhi, David
Schwab, Justin
Darwin, Veronica
Jackson, Ryan
Bolen, Brittany
Rees, Sarah
Inge, Carolyn
Kime, Robin
Burley, Veronica
Dominguez, Alexander
Patrick, Monique
Penman, Crystal
Willis, Sharnett
Bailey, Ethel
Milhouse, Gloria
DCRoomARN3500/OPEI
Bowman, Liz
Lousberg, Macara

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Kevin Kukay
Sent: Wed 9/20/2017 3:59:02 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Kevin Kukay
PO Box 312
Elmore, OH 43416

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Kim Kruse
Sent: Wed 9/20/2017 12:56:07 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Kim Kruse
4462 County Road 44
Woodville, OH 43469

To: Clark, Katherine[Clark.Katherine@epa.gov]; HQ_Facilities_Updates[HQ_Facilities_Updates@epa.gov]; Hq Parking Participants[hqparkingparticipants@usepa.onmicrosoft.com]
Cc: Davis, Michael D.[Davis.Michaeld@epa.gov]; Layne, Heather[Layne.Heather@epa.gov]; Allen, CatherineB[Allen.CatherineB@epa.gov]
From: Barton, Kathryn
Sent: Fri 9/8/2017 12:56:59 PM
Subject: RE: New parking requirements
_epaoig_notificationmemo_08-01-16_epa-parking.pdf

I wasn't able to find a full audit on OIG's website; however, in August 2016, a Project Notification memorandum was sent to OARM regarding the parking subsidy (attached). I've copied the OIG points of contact as there may be a completed report they can direct us to.

https://www.epa.gov/office-inspector-general/notification-review-epas-parking-subsidy-program

Kate Barton

From: Clark, Katherine
Sent: Thursday, September 07, 2017 9:31 AM
To: HQ_Facilities_Updates <HQ_Facilities_Updates@epa.gov>; Hq Parking Participants <hqparkingparticipants@usepa.onmicrosoft.com>
Subject: RE: New parking requirements

Would you please send a copy of the OIG's audit findings to the Hq Parking Participants?

Thank you.

Katherine Clark

From: HQ_Facilities_Updates
Sent: Thursday, September 07, 2017 9:16 AM
To: Hq Parking Participants <hqparkingparticipants@usepa.onmicrosoft.com>

Subject: New parking requirements

The agency's parking programs were recently audited by the Office of Inspector General. Based on the findings of the audit and recent agency budget cuts, the EPA will no longer offer reduced-rate parking to employees. Therefore, effective **October 1, 2017**, the parking rate will increase to **$293.45 for all parking categories**. This includes disability; unusual hours, van/carpools and motorcycle parking.

New parking requirements will also go into effect on **October 1, 2017**. HQ employees participating in the parking program can expect the following changes:

- All non-EPA (federal **and** non-federal) van/carpool members will be required to submit a memorandum, with the parking application, from their respective agency/company certifying that the employee does not receive transit subsidy benefits to commute to/from work. If the memorandum is not attached to the parking application, it will be denied.
- HQ executives will be considered a part of the "unusual hours" category to be consistent with the Code of Federal regulations, and that will be defined in the revised parking application.
- All participating employees will be required to recertify using revised EPA Form 5160-1 by **October 1, 2017**.
- Employees who choose to continue participating in the HQ parking program should make month payments using https://pay.gov/public/home.
- Employees who choose to discontinue participating in the HQ parking program must complete the parking withdrawal form and submit to headquartersparking@epa.gov.
- Employees who choose to discontinue participating in the HQ parking program that have set up automatic payments will need to cancel those payments with Pay.gov.
- Employees who choose to discontinue participating in the HQ parking program may work directly with Cristal Shimamura, RRB Parking Manager, to secure parking. Ms. Shimamura may be reached at 202-312-1317. The RRB offers discounted rates to federal employees. The rate for vehicles is $319.00 and $159.00 for motorcycles.

If you have any questions regarding the upcoming changes to the headquarters parking program, please contact the agency's HQ Parking Office at 202-564-2085.

From: Microsoft Outlook
Location: Alm Room
Importance: Normal
Subject: FW: Chief of Staff Meeting
Start Date/Time: Mon 9/18/2017 12:00:00 PM
End Date/Time: Mon 9/18/2017 1:00:00 PM

Your meeting was found to be out of date and has been automatically updated.

Updated meeting details:

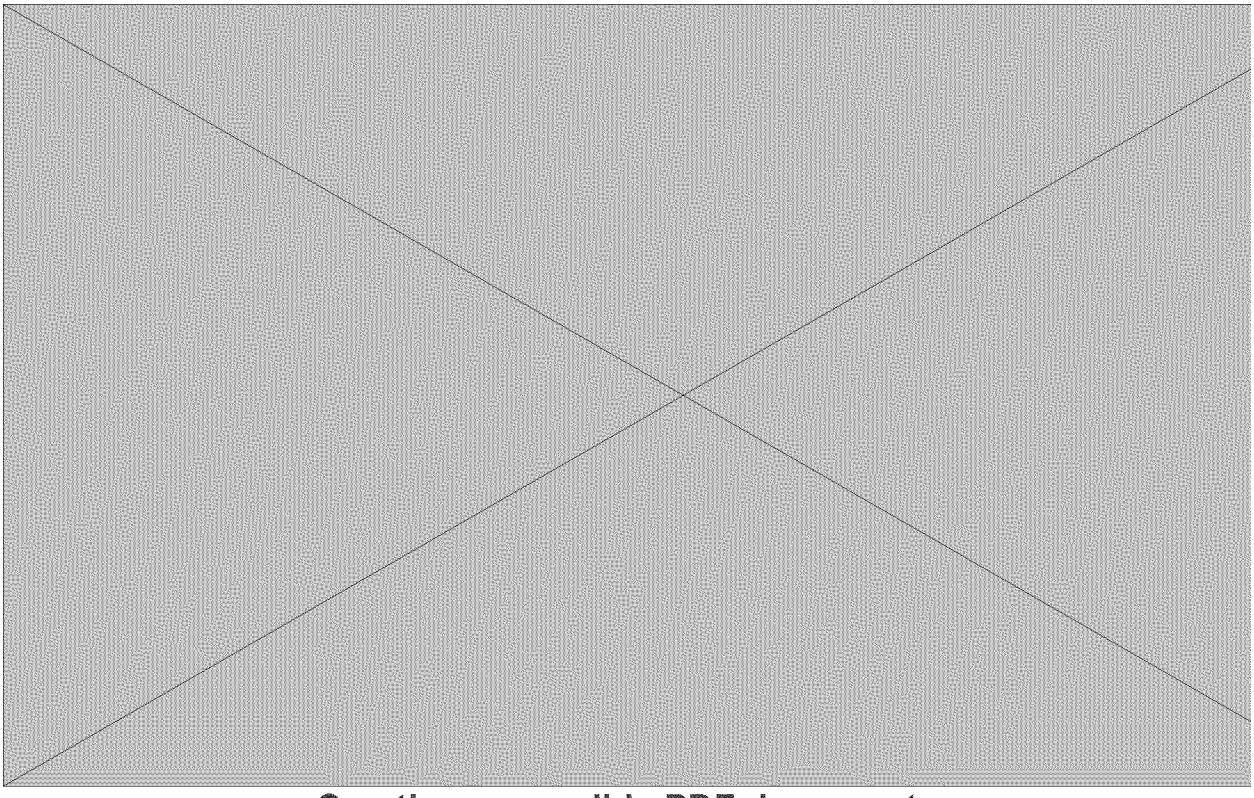
The meeting was canceled.

Sent by Microsoft Exchange Server

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Foxit Software Incorporated
Sent: Wed 11/15/2017 3:10:28 AM
Subject: [SPAM] Creating accessible PDF documents

[redacted]

View in browser



Creating accessible PDF documents

Most governments have laws that require electronic information that's developed or purchased to be accessible by vision- and hearing-impaired people. Many businesses and private organizations have adopted these policies too.

So how do you ensure you're creating an accessible PDF? Follow these best practices.

READ THIS POST

https://marketing.foxitsoftware.com/acton/ct/31973/s-046c-1711/Bct/l-00d9/l-00d9:4e8930/ct1_1/1?sid=TV2:pfd7qisEt

[redacted]



Our mailing address is : Foxit Software 41841 Albrae Street, Fremont, CA 94538, USA

[redacted]

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Matthew Pierscher
Sent: Tue 9/19/2017 6:57:21 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Matthew Pierscher
7286 jackman rd
Ida, MI 48140

To: Hq Parking Participants[hqparkingparticipants@usepa.onmicrosoft.com]
From: Poke-Williams, Shela
Sent: Tue 9/12/2017 8:33:12 PM
Subject: memo for parking

Hello to whom it may concerns, wouldn't the transit office have the memo already? Or is this something we need from our supervisor? Thanks.

From: Susan Alfonso
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: Meeting with the Specialty Equipment Market Association
Start Date/Time: Fri 9/29/2017 2:30:00 PM
End Date/Time: Fri 9/29/2017 3:00:00 PM

;

From: Microsoft Outlook
Location: Houston Tx.
Importance: Normal
Subject: Meeting Forward Notification: Hold for Travel Prep and Departure
Start Date/Time: Thur 9/14/2017 6:00:00 PM
End Date/Time: Thur 9/14/2017 10:30:00 PM

Your meeting was forwarded

Inge, Carolyn has forwarded your meeting request to additional recipients.

Meeting

Hold for Travel Prep and Departure

Meeting Time

Thursday, September 14, 2017 2:00 PM-6:30 PM.

Recipients

Dravis, Samantha

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Brad Wignall
Sent: Tue 9/19/2017 2:53:37 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Brad Wignall
7216 Winding Brook Road
Perrysburg, OH 43551

From: Paul Balserak
Location: To be reserved: Del Friscos
Importance: Normal
Subject: Accepted: Lunch with Paul B.
Start Date/Time: Tue 10/3/2017 4:00:00 PM
End Date/Time: Tue 10/3/2017 5:00:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Brice Raatz
Sent: Tue 9/19/2017 1:59:00 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Brice Raatz
2957 County Road L
Edon, OH 43518

From: Larry Schafer
Location: 1200 Pennsylvania Ave NW, Washington, DC 20004, USA
Importance: Normal
Subject: Invitation: Biodiesel Meeting w EPA (Mandy Gunasekara, Samantha Dravi... @ Wed Sep 20, 2017 1pm - 2pm (EDT) (dravis.samantha@epa.gov)
Start Date/Time: Wed 9/20/2017 5:00:00 PM
End Date/Time: Wed 9/20/2017 6:00:00 PM
invite.ics

more details »

Biodiesel Meeting w EPA (Mandy Gunasekara, Samantha Dravis, Gene Gebolys, others)

When	Wed Sep 20, 2017 1pm – 2pm Eastern Time
Where	1200 Pennsylvania Ave NW, Washington, DC 20004, USA (map)
Video call	https://plus.google.com/hangouts/_/dcdiamondgroup.com/lschafer
Calendar	dravis.samantha@epa.gov
Who	• Larry Schafer - organizer • gunasekara.mandy@epa.gov • mferaci@playmakerstrategies.com • anne steckel • dravis.samantha@epa.gov • dominguez.alexander@epa.gov • ggebolys@worldenergy.net

Going? **Yes** - **Maybe** - **No** more options »

Invitation from Google Calendar

You are receiving this courtesy email at the account dravis.samantha@epa.gov because you are an attendee of this event.

To stop receiving future updates for this event, decline this event. Alternatively you can sign up for a Google account at https://www.google.com/calendar/ and control your notification settings for your entire calendar.

Forwarding this invitation could allow any recipient to modify your RSVP response. Learn More.

Biodiesel Meeting w EPA (Mandy Gunasekara, Samantha Dravis, Gene Gebolys, others)
1200 Pennsylvania Ave NW, Washington, DC 20004, USA
20170920T170000Z
CONFIRMED

PRODID
-//Google Inc//Google Calendar 70.9054//EN

Version
2.0

CALSCALE
GREGORIAN

METHOD
REQUEST

Start Date/Time
20170920T170000Z

End Date/Time
20170920T180000Z

DTSTAMP
20170912T193724Z

ORGANIZER (CN=Larry Schafer)
mailto:lschafer@dcdiamondgroup.com

UID
7C2F5158-EFE1-4494-915E-2B429B1D6512

Attendee **mailto:gunasekara.mandy@epa .gov**
Role REQ-PARTICIPANT
RSVP TRUE

Attendee **mailto:mferaci@playm akerstrategies.com**
Role REQ-PARTICIPANT
RSVP TRUE

Attendee **mailto:annesteckel@yahoo.com**
Role REQ-PARTICIPANT
RSVP TRUE

Attendee **mailto:lschafer@dcdiamondgro up.com**
Role REQ-PARTICIPANT
RSVP TRUE

Attendee **mailto:dravis.samantha@epa.g ov**
Role REQ-PARTICIPANT
RSVP TRUE

Attendee mailto:dominguez.alexand er@epa.gov
Role REQ-PARTICIPANT
RSVP TRUE

Attendee mailto:ggebolys@worldenergy .net
Role REQ-PARTICIPANT
RSVP TRUE

Uniform Resource Locator
message://%3CSN1PR09MB082988A1A32EBDC70CA1B9869D690%40SN1PR09MB0829.nam prd09.prod.outlook.com%3E?c=1505239128&k=%7C527385600/p+hy8i05Fi

CREATED
20170912T181716Z

Description
-::~:~::~:~:~:

X-APPLE-SUGGESTION-INFO-OPAQUE-KEY

|527385600/p+hy8i05Fi

X-APPLE-SUGGESTION-INFO-UNIQUE-KEY

|2|\|527385600/p+hy8i05Fi|\|5\|\\\ |A2FEC788-DA2D-46CD-940B-CBF5453B63FF\\\|<SN1PR09MB082988A1A32EBDC70CA1B9869D690@SN1PR09MB0829.namprd09.prod.outlook.com>

From: Rob Underwood
Location: 3500 WJCN
Importance: Normal
Subject: Accepted: Meeting with the Petroleum Marketers Association of America (PMAA)
Start Date/Time: Thur 10/12/2017 3:00:00 PM
End Date/Time: Thur 10/12/2017 3:30:00 PM

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Roy Murray
Sent: Thur 9/14/2017 4:33:36 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Roy Murray
108 Arch
philadelphia, PA 19106

From: Kent Lassman
Location: 3513A William Jefferson Clinton North
Importance: Normal
Subject: Accepted: Meeting with Competitive Enterprise Institute President Kent Lassman
Start Date/Time: Fri 9/29/2017 7:00:00 PM
End Date/Time: Fri 9/29/2017 7:30:00 PM

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: To be rescheduled: AGA and NGVA Regulatory Reform Discussion Focusing on the Subpart W Reporting Rule and the PCB Rules
Start Date/Time: Tue 9/12/2017 5:30:00 PM
End Date/Time: Tue 9/12/2017 6:00:00 PM
AGA 05 15 2017 Comments on EPA Rule Review Docket EPA-HQ-OA-2017-0190.pdf
NGVA EPA Regulatory Review May 2017 Final.pdf

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Kathryn Clay, Allison Cunningham and Pamela Lacey

Request: The American Gas Association (AGA) and Natural Gas Vehicles of America (NGVA) would like to arrange a follow-up meeting with you to discuss our ideas for regulatory reform, as described in our attached comments, filed May 15, 2017 in Docket EPA-HQ-OA-2017. AGA's comments address several programs, but at this meeting, we will want to focus on revisions we have suggested to improve: (1) the Subpart W reporting rule and (2) the PCB rules.

Contact:
Pamela A. Lacey | Chief Regulatory Counsel
American Gas Association<http://www.aga.org>

400 N. Capitol St., NW | Washington, DC | 20001
P: 202-824-7340 | M: 202-809-6565 | F: 202-824-9190 | placey@aga.org
<mailto:placey@aga.org>

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Tue 11/14/2017 3:37:49 PM
Subject: [SPAM] Detecting Deception: Practical Skills for Lawyers

Manage Preferences | View in Browser

Detecting Deception: Practical Skills for Lawyers

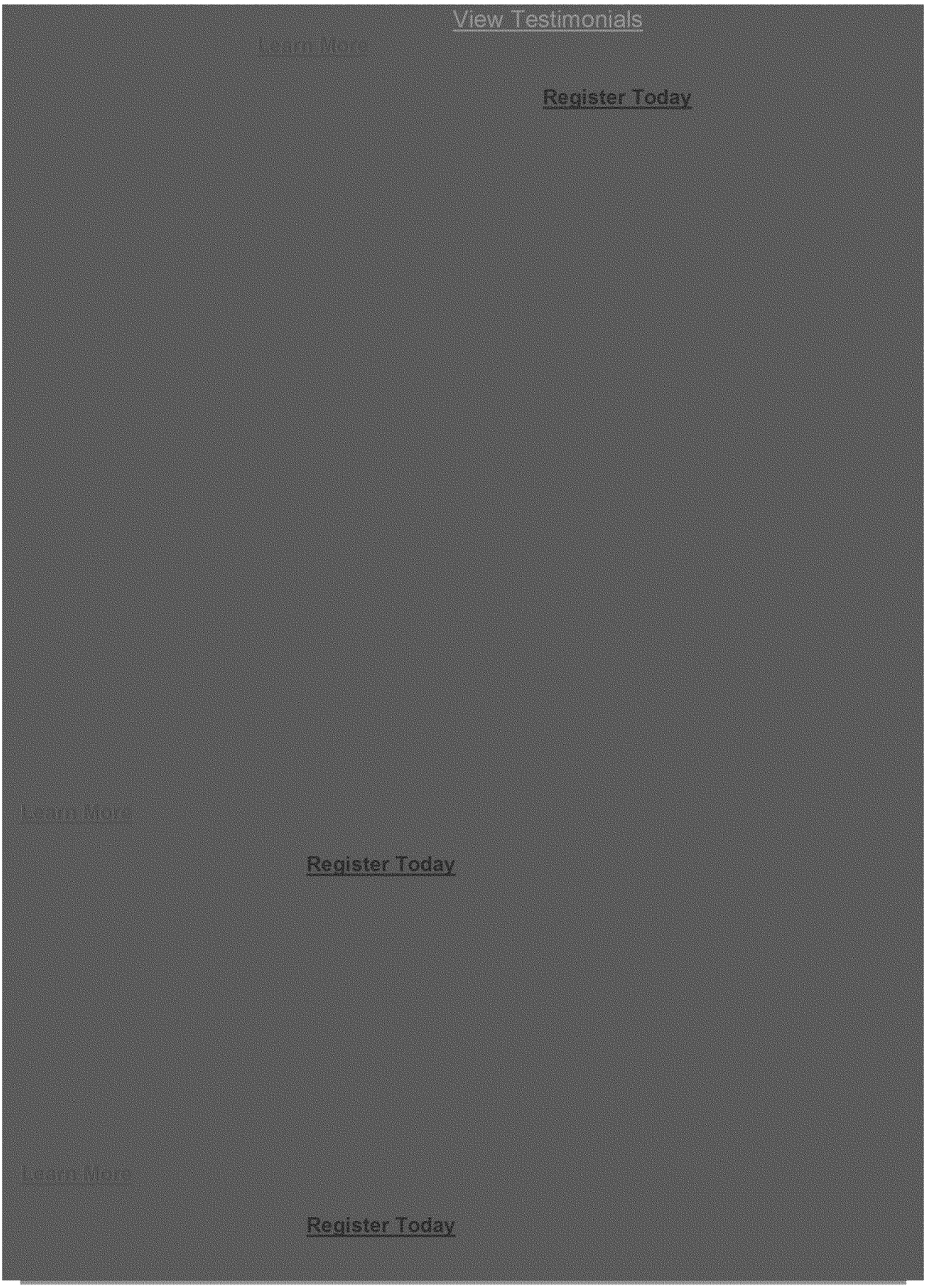
November
30
3 pm - 4:30 pm ET

Presenter: Michael Johnson, CEO of Clear Law Institute and former U.S. Department of Justice attorney

Credits: CLE in all states (Credit Details)

Can't attend live? By registering, you will be able to view the course live, view a recording at any time after the live presentation, or both.

Viewing Options: View on your computer, tablet, or smartphone


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From: Chris Kersting
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: Meeting with the Specialty Equipment Market Association
Start Date/Time: Thur 9/14/2017 3:30:00 PM
End Date/Time: Thur 9/14/2017 4:00:00 PM

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Larry Laboe
Sent: Thur 9/21/2017 11:15:16 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Larry Laboe
7348 lakeshore dr
Newport, MI 48166

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: John Thomason
Sent: Thur 9/21/2017 10:22:38 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

John Thomason
4130 E Dunbar Rd
Monroe, MI 48161

From: Microsoft Outlook
Location: 3500 WJCN
Importance: Normal
Subject: Meeting Forward Notification: Hold for Intro with Matt T. and OEJ Managers
Start Date/Time: Thur 9/28/2017 2:00:00 PM
End Date/Time: Thur 9/28/2017 2:30:00 PM

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Wallace, Maria has forwarded your meeting request to additional recipients.

Meeting

Hold for Intro with Matt T. and OEJ Managers

Meeting Time

Thursday, September 28, 2017 10:00 AM-10:30 AM.

Recipients

Tejada, Matthew
Lewis, Sheila
Lee, Charles
Minter, Marsha
Ruhl, Suzi

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server

From: Jonathan E. Missner
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: Meeting with the Specialty Equipment Market Association
Start Date/Time: Thur 9/14/2017 3:30:00 PM
End Date/Time: Thur 9/14/2017 4:00:00 PM

From: Microsoft Outlook
Location: 3500 WJCN
Importance: Normal
Subject: Meeting Forward Notification: NAFTA Briefing
Start Date/Time: Mon 9/11/2017 1:30:00 PM
End Date/Time: Mon 9/11/2017 2:00:00 PM

Your meeting was forwarded

Schwab, Justin has forwarded your meeting request to additional recipients.

Meeting
NAFTA Briefing

Meeting Time
Monday, September 11, 2017 9:30 AM-10:00 AM.

Recipients
Siciliano, CarolAnn

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Mon 11/13/2017 3:26:05 PM
Subject: [SPAM] Ethics and the Virtual Practice of Law

[illegible] | [illegible] | [illegible]

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Ethics and the Virtual Practice of Law

November
28
1 pm - 2:15 pm ET

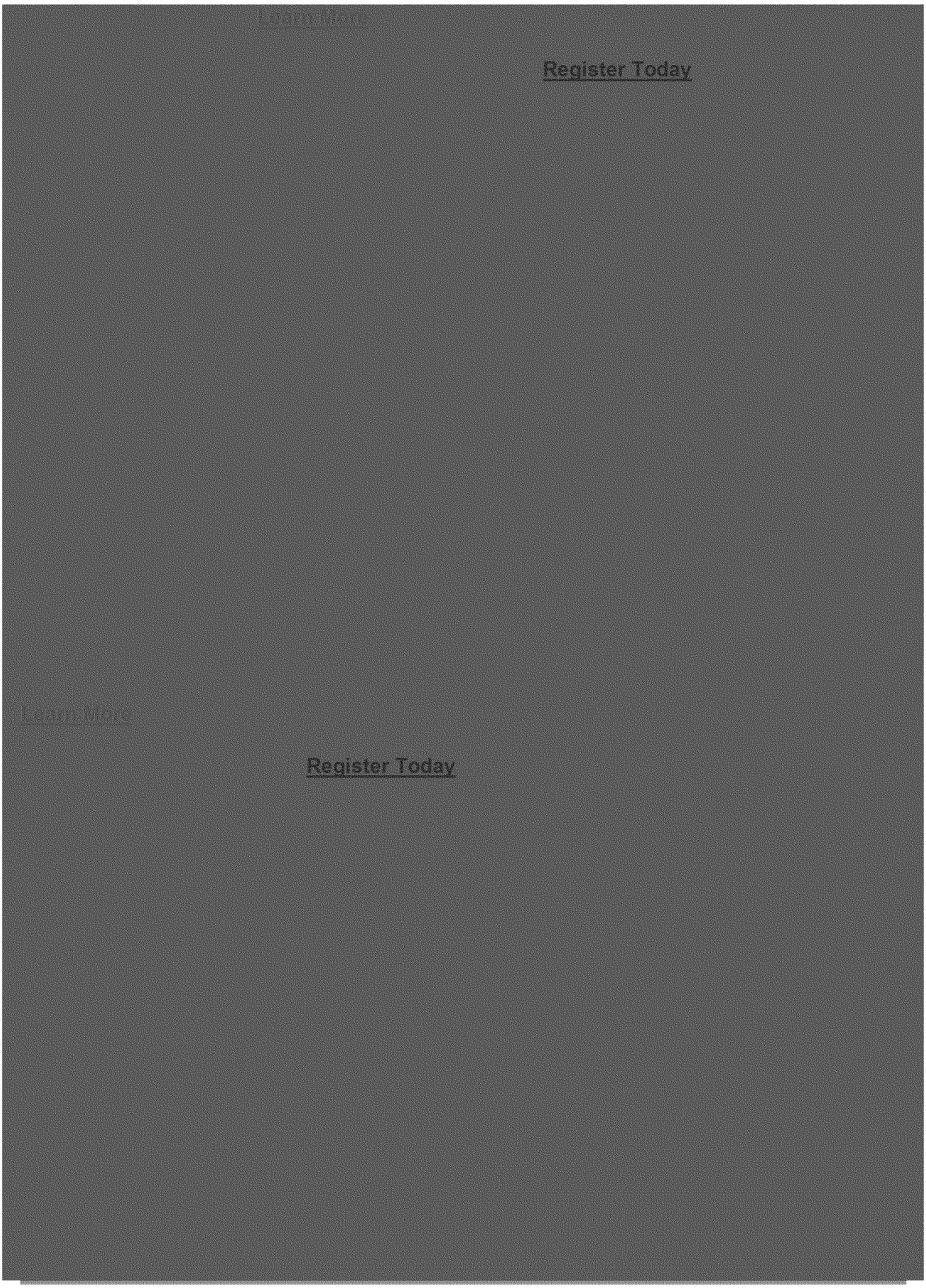
Presenters: Lauren E. Snyder and Thomas B. Mason, of Harris, Wiltshire & Grannis LLP

Credits: CLE in all states (Credit Details)

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Wed 11/8/2017 3:59:16 PM
Subject: [SPAM] Tomorrow: Financial Tools for Attorneys: Increasing Your Clients' Performance

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Financial Tools for Attorneys: Increasing Your Clients' Performance

November
9
1 pm - 2:15 pm ET

Presenter: Morris Nunes, Private Practice Attorney

Credits: CPE, CLE in all states (Credit Details)

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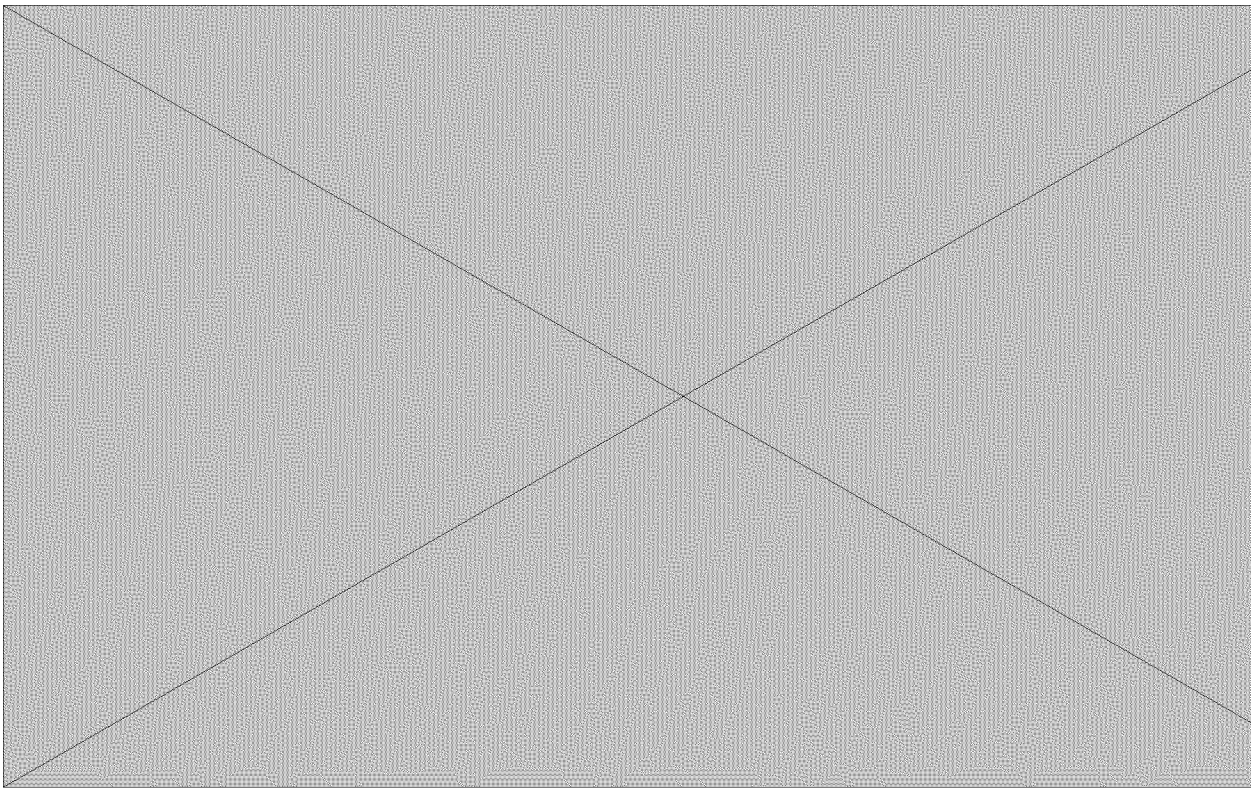
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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Foxit Software Incorporated
Sent: Wed 11/8/2017 1:07:35 AM
Subject: How to track different versions of your PDF with ConnectedPDF

[redacted]

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How to track different versions of your PDF with ConnectedPDF

ConnectedPDF technology in PhantomPDF gives you a lot of benefits when it comes to taking more control over who does what with your documents—even after you've already emailed them or published them online.

Let's look at how to use ConnectedPDF to track different versions of a PDF document, and…

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[redacted]



Our mailing address is : Foxit Software 41841 Albrae Street, Fremont, CA 94538, USA

[redacted]

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Robert Shipman
Sent: Thur 9/21/2017 2:14:40 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Robert Shipman
805 Culley Rd
Holland, OH 43528

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Eric Wilson
Sent: Wed 9/20/2017 8:53:53 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Eric Wilson
903 Brookley
Toledo, OH 43607

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Gerald Bodnar
Sent: Wed 9/20/2017 8:53:39 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Gerald Bodnar
2324 Roseann dr
Toledo, OH 43611

From: Delahoyde, Magdelana A. EOP/WHO
Location: SoW 230A
Importance: Normal
Subject: CAFE/Global/Alliance Meeting
Start Date/Time: Thur 9/28/2017 6:00:00 PM
End Date/Time: Thur 9/28/2017 7:00:00 PM

The purpose of this meeting is to discuss next steps in policy development on the Mid-Term Review and CAFE/GHG rulemakings.

WAVES link: https://events.whitehouse.gov/form?rid=9936YQY9KG

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Fri 11/10/2017 3:56:58 PM
Subject: [SPAM] Microsoft Excel for the Paralegal

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Microsoft Excel for the Paralegal

November
13
3 pm - 4:15 pm ET

Presenter: Joe James, team member for Micro Strategies

Credits: NALA, NFPA (Credit Details)

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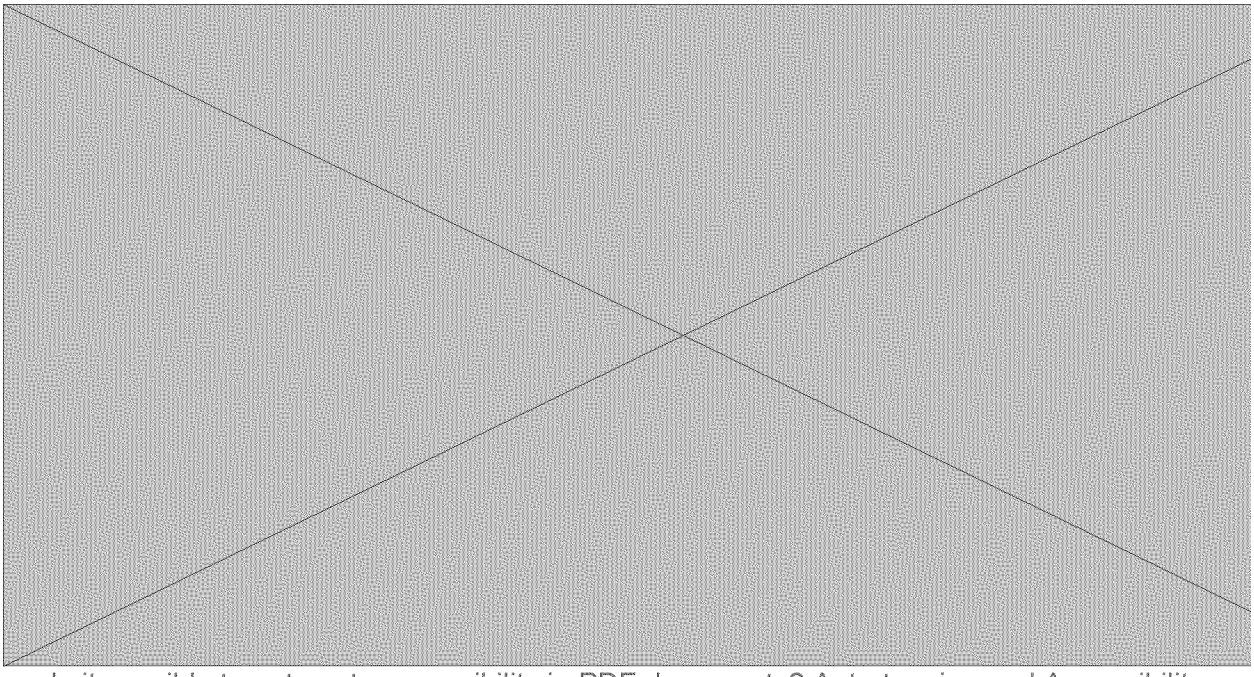
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From: Foxit Software Incorporated
Sent: Fri 11/10/2017 12:30:40 PM
Subject: Webinar: Automating FOIA and Section 508

[redacted]

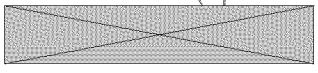
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Talk to our experts, Carsten Heiermann, CEO of Foxit Europe and Dan Morris, Sr. Solutions Architect, who will walk you through the process, making accessibility implementation quick and easy.

Webinar date and time:

Day: Thursday, 16th November
Time: 10am Pacific time (1pm Eastern time)



Meet Your Presenters:

Carsten Heiermann	Dan Morris	DeeDee Kato
CEO of Foxit Europe	Senior Solutions Architect Foxit Software	Senior Director of Marketing

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Thur 11/9/2017 3:23:03 PM
Subject: [SPAM] Contract Law and E-Signatures

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Contract Law and E-Signatures

November
13
1 pm - 2:15 pm ET

Presenter: Ken Moyle, Managing Member of K6 Legal PLLC

Credits: CLE in all states (Credit Details)

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: virtualizationwebinars
Sent: Tue 11/7/2017 4:37:08 PM
Subject: Invite - 2017 Red Hat Government Symposium - Livestream

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Thursday, November 9, 2017

8:30am - 2:00pm ET

Online

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Click here *to view the current on-site agenda. The final livestream agenda is still in progress and will be provided to you as the event nears.*

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Tue 11/7/2017 3:53:06 PM
Subject: [SPAM] Law Firm Cyber Security and Legal Malpractice Risks

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Law Firm Cyber Security and Legal Malpractice Risks

November
20
3 pm - 4:15 pm ET

Presenter: Margaret Reetz, partner at Mendes & Mount LLP

Credits: CLE in all states (Credit Details)

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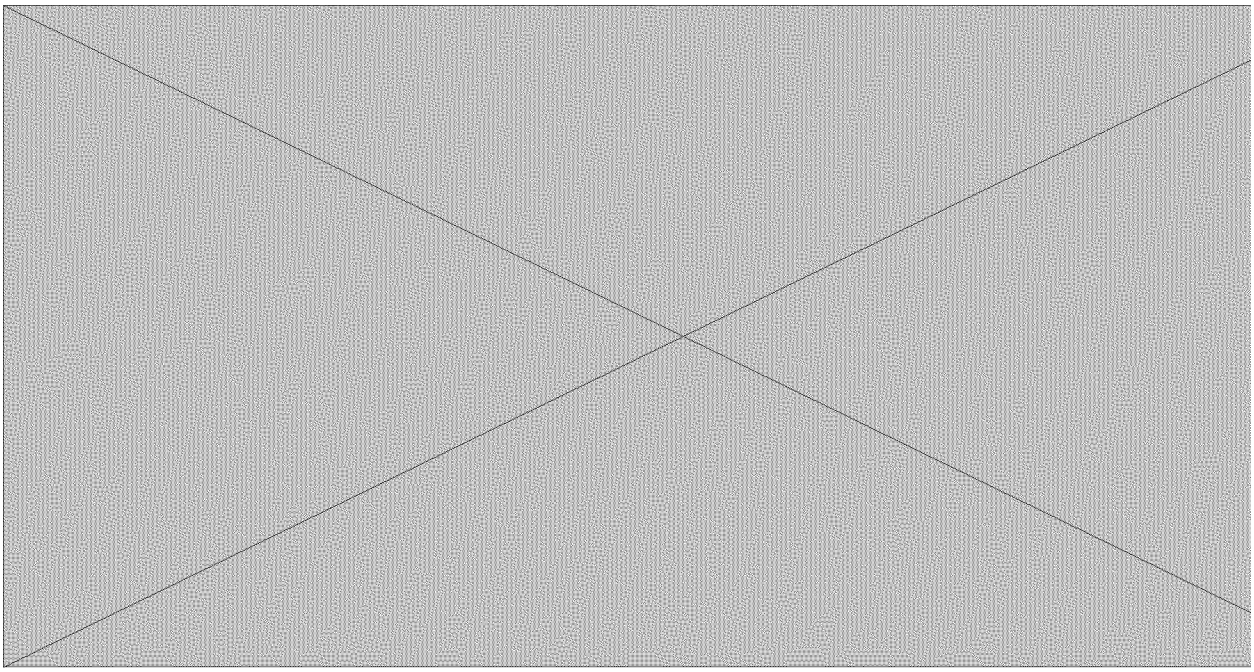
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From: Foxit Software Incorporated
Sent: Wed 11/15/2017 4:38:44 PM
Subject: Webinar: Automating FOIA and Section 508

[redacted]

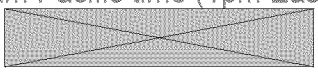
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Talk to our experts, Carsten Heiermann, CEO of Foxit Europe and Dan Morris, Sr. Solutions Architect, who will walk you through the process, making accessibility implementation quick and easy.

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Day: Thursday, 16th November
Time: 10am Pacific time (1pm Eastern time)



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CEO of Foxit Europe	Senior Solutions Architect Foxit Software	Senior Director of Marketing

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Wed 11/15/2017 4:13:22 PM
Subject: [SPAM] Negotiating Representations, Warranties and Indemnification Clauses in Technology Agreements

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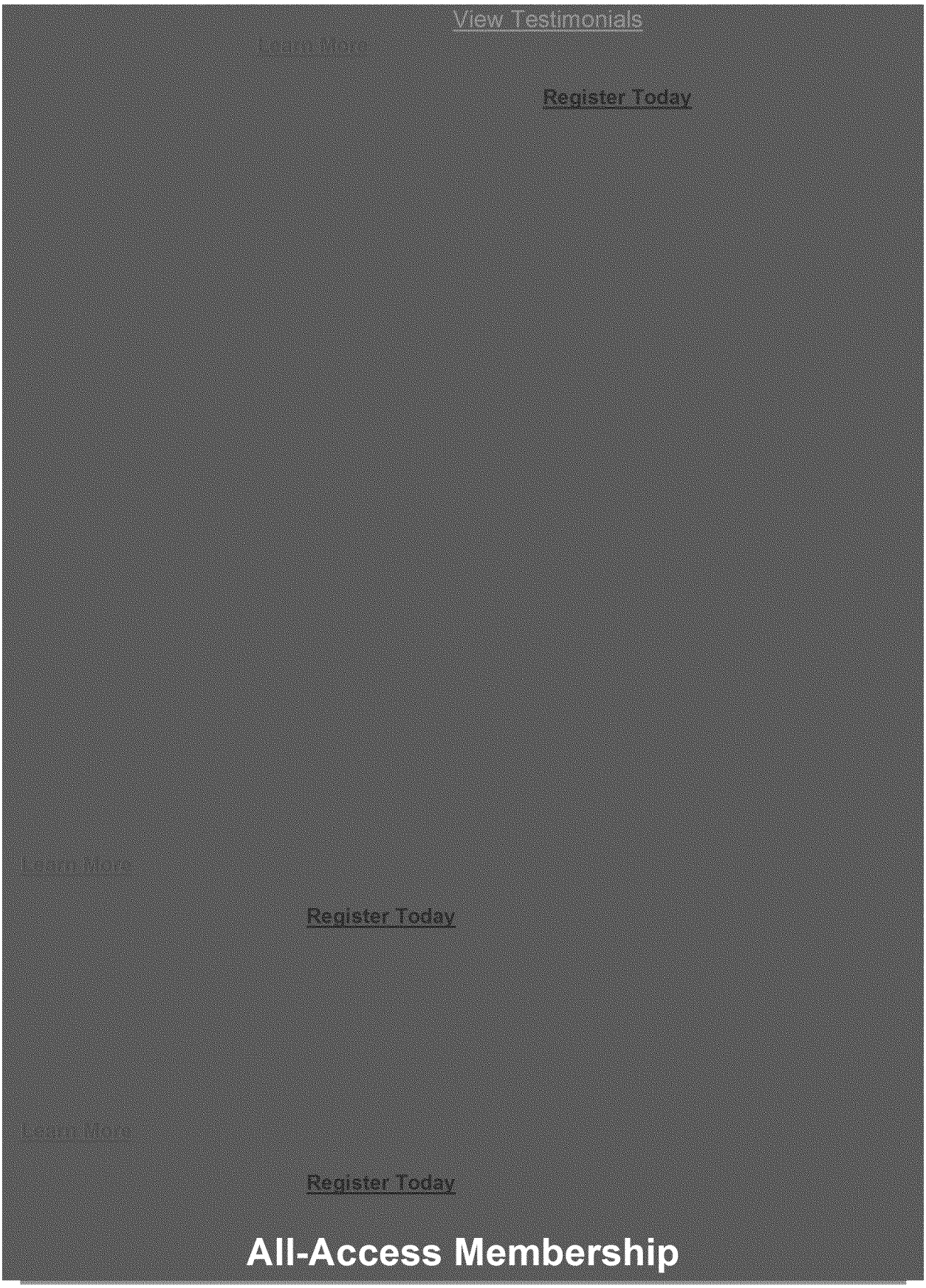
December
1
1 pm - 2:15 pm ET

Presenter: Michael Overly, of Foley & Lardner LLP

Credits: CLE in all states (Credit Details)

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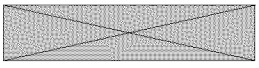
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From: Microsoft Outlook
Sent: Wed 10/11/2017 4:21:12 PM
Subject: Undeliverable: RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6350 - Final / Administrator's Signature / Review #1 / R09 - 'Nevada - Visibility FIP Rescission for the Mohave Generating Station')
RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6350 - Final / Administrator's Signature / Review #1 / R09 - 'Nevada - Visibility FIP Rescission for the Mohave Generating Station')



Your message couldn't be delivered to multiple recipients.

The recipients weren't found at epamail.epa.gov.

dravis.samantha	**Office 365**	**Recipients**
Action Required	Recipients	

Unknown To address

Couldn't deliver to the following recipients:
Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- **Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "To send this message again, click here." Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click Send.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: Fix email delivery issues for error code 5.1.10 in Office 365, and then send the message again. Retype the entire recipient address before selecting Send.

If the problem continues, forward this message to your email admin. If you're an email admin, refer to the More Info for Email Admins section

below.

Was this helpful? *Send feedback to Microsoft.*

More Info for Email Admins

Status code: 550 5.1.10

This error occurs because the sender sent a message to an email address hosted by Office 365 but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Recipient has a valid license - Make sure the recipient has an Office 365 license assigned to them. The recipient's email admin can use the Office 365 admin center to assign a license (Users > Active Users > select the recipient > Assigned License > Edit).

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see Fix email delivery issues for error code 5.1.10 in Office 365.

Original Message Details

Created Date:	**10/11/2017 4:21:10 PM**
Sender Address:	**dravis.samantha@epa.gov**
Recipient Address:	**Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov**
Subject:	**RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6350 - Final / Administrator's Signature / Review #1 / R09 - 'Nevada - Visibility FIP Rescission for the Mohave Generating Station')**

Error Details

Reported error:	***550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient not found by SMTP address lookup***

DSN generated by:

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELAY TIME
1	10/11/2017 4:21:10 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1469.namprd09.prod.outlook.com	mapi	*
2	10/11/2017 4:21:12 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1486.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_25	2 sec

Original Message Headers

```
Authentication-Results: epa.gov; dkim=none (message not signed)
 header.d=none;epa.gov; dmarc=none action=none header.from=epa.gov;
Received: from MWHPR09MB1469.namprd09.prod.outlook.com (10.173.50.19) by
 MWHPR09MB1486.namprd09.prod.outlook.com (10.173.50.136) with Microsoft SMTP
 Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384_P256) id
 15.20.77.7; Wed, 11 Oct 2017 16:21:12 +0000
Received: from MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) by
 MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) with mapi id
 15.20.0077.020; Wed, 11 Oct 2017 16:21:10 +0000
Content-Type: application/ms-tnef; name="winmail.dat"
Content-Transfer-Encoding: binary
From: "Dravis, Samantha" <dravis.samantha@epa.gov>
To: "Owens, Nicole" <Owens.Nicole@epamail.epa.gov>, Samantha Dravis
          <Dravis.Samantha@epamail.epa.gov>
CC: Brittany Bolen <Bolen.Brittany@epamail.epa.gov>, "Kenny, Shannon"
          <Kenny.Shannon@epa.gov>, "Kime, Robin" <Kime.Robin@epa.gov>,
"Pritchard,
 Eileen" <Pritchard.Eileen@epa.gov>, "Rees, Sarah" <rees.sarah@epa.gov>,
          "Nickerson, William" <Nickerson.William@epa.gov>, "Corrales, Mark"
          <Corrales.Mark@epa.gov>, "Curry, Bridgid" <Curry.Bridgid@epa.gov>,
"VanLare,
 Paula" <VanLare.Paula@epa.gov>, "Adams, Darryl" <Adams.Darryl@epa.gov>
Subject: RE: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 6350 - Final / Administrator's Signature / Review #1 / R09 - 'Nevada -
 Visibility FIP Rescission for the Mohave Generating Station')
Thread-Topic: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 6350 - Final / Administrator's Signature / Review #1 / R09 - 'Nevada -
 Visibility FIP Rescission for the Mohave Generating Station')
Thread-Index: AQHTQqTFwBvMMVLu4UiLsYWY/tZYD6Le1JXw
Date: Wed, 11 Oct 2017 16:21:10 +0000
Message-ID:
<MWHPR09MB1469E2BEBF48354DE581C6F7E64A0@MWHPR09MB1469.namprd09.prod.outlook.com>
References: <OFAEFF7E5B.7383502D-ON852581B6.005470F4-
852581B6.005472B6@epamail.epa.gov>
In-Reply-To: <OFAEFF7E5B.7383502D-ON852581B6.005470F4-
852581B6.005472B6@epamail.epa.gov>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator:
<MWHPR09MB1469E2BEBF48354DE581C6F7E64A0@MWHPR09MB1469.namprd09.prod.outlook.com>
MIME-Version: 1.0
```

X-Originating-IP: [2620:117:5010:194::d017]
X-MS-PublicTrafficType: Email
X-Microsoft-Exchange-Diagnostics:
1;MWHPR09MB1469;35:lnApoTE4aC+Q+D5mCyalE/AsYAJzyVDNUICs7hUnwuN+uT3TaO1JyW8ACtjQnzGnceAuGpO
X-MS-Exchange-Antispam-SRFA-Diagnostics: SSOS;SSOR;
X-Forefront-Antispam-Report:
	SFV:SKI;SCL:-1;SFV:SKI;SFS:;DIR:INB;SFP:;SCL:-
1;SRVR:MWHPR09MB1486;H:MWHPR09MB1469.namprd09.prod.outlook.com;FPR:;SPF:None;LANG:en;
Return-Path: dravis.samantha@epa.gov
X-MS-Office365-Filtering-Correlation-Id: 4d6b1e89-e6ef-4c01-81d5-08d510c4158c
X-Microsoft-Antispam:
	UriScan:;BCL:0;PCL:0;RULEID:(22001)(2017030254152)(2017052603199)(49563074)(2017
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1486;3:5AA+qCeXbGQ+ZAuX5HiSDLh0ivYyg/J3vkaHCU68LtpKJwcoMyHGsn5An33AB9
X-MS-TrafficTypeDiagnostic: MWHPR09MB1486:
X-Exchange-Antispam-Report-Test:
	UriScan:(141739891587465)(21748063052155)(229425074694992);
X-Exchange-Antispam-Report-CFA-Test:
	BCL:0;PCL:0;RULEID:(100000700101)(100105000095)(100000701101)(100105300095)(1000
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1486;4:i3yFspF6Jm5gFGCP/+WAU2iLY+mEERTxL651phZflZvIp6mbh0/FTvZnfC+UFX
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1486;5:S+wtqUysVgkpp59Yfs2U438uaSvSTuODegKRdt2n064uI5a4T7gzeVAkhQX0Xs
SpamDiagnosticOutput: 1:0
X-MS-Exchange-CrossTenant-OriginalArrivalTime: 11 Oct 2017 16:21:10.3332
 (UTC)
X-MS-Exchange-CrossTenant-FromEntityHeader: Hosted
X-MS-Exchange-CrossTenant-Id: 88b378b3-6748-4867-acf9-76aacbeca6a7
X-MS-Exchange-Transport-CrossTenantHeadersStamped: MWHPR09MB1486

To: Owens, Nicole[Owens.Nicole@epa.gov]; Samantha Dravis[Dravis.Samantha@epamail.epa.gov]
Cc: Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Rees, Sarah[rees.sarah@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; VanLare, Paula[VanLare.Paula@epa.gov]; Adams, Darryl[Adams.Darryl@epa.gov]
From: Dravis, Samantha
Sent: Wed 10/11/2017 4:21:10 PM
Subject: RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6350 - Final / Administrator's Signature / Review #1 / R09 - 'Nevada - Visibility FIP Rescission for the Mohave Generating Station')

Approved

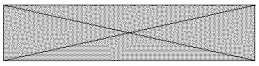
From: Nicole Owens [mailto:Owens.Nicole@epamail.epa.gov]
Sent: Wednesday, October 11, 2017 11:22 AM
To: Samantha Dravis <Dravis.Samantha@epamail.epa.gov>
Cc: Brittany Bolen <Bolen.Brittany@epamail.epa.gov>; Kenny, Shannon <Kenny.Shannon@epa.gov>; Kime, Robin <Kime.Robin@epa.gov>; Pritchard, Eileen <Pritchard.Eileen@epa.gov>; Rees, Sarah <rees.sarah@epa.gov>; Nickerson, William <Nickerson.William@epa.gov>; Corrales, Mark <Corrales.Mark@epa.gov>; Curry, Bridgid <Curry.Bridgid@epa.gov>; VanLare, Paula <VanLare.Paula@epa.gov>; Adams, Darryl <Adams.Darryl@epa.gov>
Subject: OP Policy Review - ORPM Office Director Approval Notification (SAN 6350 - Final / Administrator's Signature / Review #1 / R09 - 'Nevada - Visibility FIP Rescission for the Mohave Generating Station')

Approval for Administrator's Signature: Final - 'Nevada - Visibility FIP Rescission for the Mohave Generating Station'

This Policy Review is ready for OP Associate Administrator Approval.

Link to Policy Review Document-> 

To: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]
From: Microsoft Outlook
Sent: Wed 10/11/2017 4:20:59 PM
Subject: Undeliverable: RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 5809.1 - Final / OCIR Review pre-Signature / Review #1 / OW - 'Hypoxia Task Force Report to Congress')
RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 5809.1 - Final / OCIR Review pre-Signature / Review #1 / OW - 'Hypoxia Task Force Report to Congress')



Your message couldn't be delivered to multiple recipients.

The recipients weren't found at epamail.epa.gov.

dravis.samantha	**Office 365**	**Recipients**
Action Required	Recipients	

Unknown To address

Couldn't deliver to the following recipients:
Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- **Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "To send this message again, click here." Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click Send.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: Fix email delivery issues for error code 5.1.10 in Office 365, and then send the message again. Retype the entire recipient address before selecting Send.

If the problem continues, forward this message to your email admin. If you're an email admin, refer to the More Info for Email Admins section

below.

Was this helpful? *Send feedback to Microsoft.*

More Info for Email Admins

Status code: 550 5.1.10

This error occurs because the sender sent a message to an email address hosted by Office 365 but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Recipient has a valid license - Make sure the recipient has an Office 365 license assigned to them. The recipient's email admin can use the Office 365 admin center to assign a license (Users > Active Users > select the recipient > Assigned License > Edit).

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see Fix email delivery issues for error code 5.1.10 in Office 365.

Original Message Details

Created Date:	**10/11/2017 4:20:57 PM**
Sender Address:	**dravis.samantha@epa.gov**
Recipient Address:	**Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov**
Subject:	**RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 5809.1 - Final / OCIR Review pre-Signature / Review #1 / OW - 'Hypoxia Task Force Report to Congress')**

Error Details

Reported error:	***550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient not found by SMTP address lookup***
DSN generated by:	

MWHPR09MB1453.namprd09.prod.outlook.com

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELAY TIME
1	10/11/2017 4:20:57 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1453.namprd09.prod.outlook.com	mapi	*
2	10/11/2017 4:20:58 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1453.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_25	1 sec

Original Message Headers

```
Authentication-Results: epa.gov; dkim=none (message not signed)
 header.d=none;epa.gov; dmarc=none action=none header.from=epa.gov;
Received: from MWHPR09MB1469.namprd09.prod.outlook.com (10.173.50.19) by
 MWHPR09MB1453.namprd09.prod.outlook.com (10.173.50.15) with Microsoft SMTP
 Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384_P256) id
 15.20.77.7; Wed, 11 Oct 2017 16:20:58 +0000
Received: from MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) by
 MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) with mapi id
 15.20.0077.020; Wed, 11 Oct 2017 16:20:57 +0000
Content-Type: application/ms-tnef; name="winmail.dat"
Content-Transfer-Encoding: binary
From: "Dravis, Samantha" <dravis.samantha@epa.gov>
To: "Owens, Nicole" <Owens.Nicole@epamail.epa.gov>, Samantha Dravis
          <Dravis.Samantha@epamail.epa.gov>
CC: Brittany Bolen <Bolen.Brittany@epamail.epa.gov>, "Kenny, Shannon"
          <Kenny.Shannon@epa.gov>, "Kime, Robin" <Kime.Robin@epa.gov>,
"Pritchard,
 Eileen" <Pritchard.Eileen@epa.gov>, "Rees, Sarah" <rees.sarah@epa.gov>,
          "Nickerson, William" <Nickerson.William@epa.gov>, "Corrales, Mark"
          <Corrales.Mark@epa.gov>, "Curry, Bridgid" <Curry.Bridgid@epa.gov>,
"Johnson,
 Ann" <Johnson.Ann@epa.gov>, "Nurse, Leanne" <Nurse.Leanne@epa.gov>
Subject: RE: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 5809.1 - Final / OCIR Review pre-Signature / Review #1 / OW - 'Hypoxia
 Task Force Report to Congress')
Thread-Topic: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 5809.1 - Final / OCIR Review pre-Signature / Review #1 / OW - 'Hypoxia
 Task Force Report to Congress')
Thread-Index: AQHTQqTYCSdsE/FN4USWl17jvlgSbaLe1IiQ
Date: Wed, 11 Oct 2017 16:20:57 +0000
Message-ID:
<MWHPR09MB14694D037C560AE6E70A6EE3E64A0@MWHPR09MB1469.namprd09.prod.outlook.com>
References: <OF5B2BF8FF.3F7DF3D6-ON852581B6.00547F56-
852581B6.005480F2@epamail.epa.gov>
In-Reply-To: <OF5B2BF8FF.3F7DF3D6-ON852581B6.00547F56-
852581B6.005480F2@epamail.epa.gov>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator:
<MWHPR09MB14694D037C560AE6E70A6EE3E64A0@MWHPR09MB1469.namprd09.prod.outlook.com>
MIME-Version: 1.0
```

X-Originating-IP: [2620:117:5010:194::d017]
X-MS-PublicTrafficType: Email
X-Microsoft-Exchange-Diagnostics:
1;MWHPR09MB1469;35:EuEF5TgFP/7xjp5TTNVUkzYlptBnvLXvvzcyKSdBL6P0TMHZOCqIu6j5eTUuMkaOOtwyEln
X-MS-Exchange-Antispam-SRFA-Diagnostics: SSOS;SSOR;
X-Forefront-Antispam-Report:
	SFV:SKI;SCL:-1;SFV:SKI;SFS:;DIR:INB;SFP:;SCL:-
1;SRVR:MWHPR09MB1453;H:MWHPR09MB1469.namprd09.prod.outlook.com;FPR:;SPF:None;LANG:en;
Return-Path: dravis.samantha@epa.gov
X-MS-Office365-Filtering-Correlation-Id: 401c69d2-c75e-4324-2182-08d510c40e19
X-Microsoft-Antispam:
	UriScan:;BCL:0;PCL:0;RULEID:(22001)(2017030254152)(2017052603199)(49563074)(2017
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1453;3:rXcDT2+aN4nS45Ss1x8tr7G+8Fc7C+1bBZcIsvmNQ3/g0hfs/hleFhVCJp5iEt
X-MS-TrafficTypeDiagnostic: MWHPR09MB1453:
X-Exchange-Antispam-Report-Test:
	UriScan:(141739891587465)(21748063052155)(229425074694992);
X-Exchange-Antispam-Report-CFA-Test:
	BCL:0;PCL:0;RULEID:(100000700101)(100105000095)(100000701101)(100105300095)(1000
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1453;4:MNQixv4nVpXtZ/B1sJOr1LTC+zgLihCPyNb4YuSdszPuEYSaaxYtAEu2TGx8IH
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1453;5:8xSziEs19LC3m7k1G8bpVNHUpHfl+MV3V0a6PpfIUGfrkwLZ6z//6wW4I5EQHw
SpamDiagnosticOutput: 1:0
X-MS-Exchange-CrossTenant-OriginalArrivalTime: 11 Oct 2017 16:20:57.8018
 (UTC)
X-MS-Exchange-CrossTenant-FromEntityHeader: Hosted
X-MS-Exchange-CrossTenant-Id: 88b378b3-6748-4867-acf9-76aacbeca6a7
X-MS-Exchange-Transport-CrossTenantHeadersStamped: MWHPR09MB1453

To: Owens, Nicole[Owens.Nicole@epa.gov]; Samantha Dravis[Dravis.Samantha@epamail.epa.gov]
Cc: Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Rees, Sarah[rees.sarah@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; Johnson, Ann[Johnson.Ann@epa.gov]; Nurse, Leanne[Nurse.Leanne@epa.gov]
From: Dravis, Samantha
Sent: Wed 10/11/2017 4:20:57 PM
Subject: RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 5809.1 - Final / OCIR Review pre-Signature / Review #1 / OW - 'Hypoxia Task Force Report to Congress')

Approved

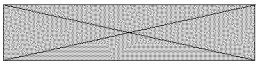
From: Nicole Owens [mailto:Owens.Nicole@epamail.epa.gov]
Sent: Wednesday, October 11, 2017 11:23 AM
To: Samantha Dravis <Dravis.Samantha@epamail.epa.gov>
Cc: Brittany Bolen <Bolen.Brittany@epamail.epa.gov>; Kenny, Shannon <Kenny.Shannon@epa.gov>; Kime, Robin <Kime.Robin@epa.gov>; Pritchard, Eileen <Pritchard.Eileen@epa.gov>; Rees, Sarah <rees.sarah@epa.gov>; Nickerson, William <Nickerson.William@epa.gov>; Corrales, Mark <Corrales.Mark@epa.gov>; Curry, Bridgid <Curry.Bridgid@epa.gov>; Johnson, Ann <Johnson.Ann@epa.gov>; Nurse, Leanne <Nurse.Leanne@epa.gov>
Subject: OP Policy Review - ORPM Office Director Approval Notification (SAN 5809.1 - Final / OCIR Review pre-Signature / Review #1 / OW - 'Hypoxia Task Force Report to Congress')

Approval for Administrator's Signature: Final - 'Hypoxia Task Force Report to Congress'

This Policy Review is ready for OP Associate Administrator Approval.

Link to Policy Review Document-> 

To: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]
From: Microsoft Outlook
Sent: Wed 10/11/2017 4:20:43 PM
Subject: Undeliverable: RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6024 - Direct Final / Administrator's Signature / Review #1 / OCSPP - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Produc...
RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6024 - Direct Final / Administrator's Signature / Review #1 / OCSPP - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Products')



Your message couldn't be delivered to multiple recipients.

The recipients weren't found at epamail.epa.gov.

dravis.samantha	**Office 365**	**Recipients**
Action Required	Recipients	

Unknown To address

Couldn't deliver to the following recipients:
Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- **Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "To send this message again, click here." Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click Send.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: Fix email delivery issues for error code 5.1.10 in Office 365, and then send the message again. Retype the entire recipient address before selecting Send.

If the problem continues, forward this message to your email admin. If

you're an email admin, refer to the More Info for Email Admins section below.

Was this helpful? *Send feedback to Microsoft.*

More Info for Email Admins

Status code: 550 5.1.10

This error occurs because the sender sent a message to an email address hosted by Office 365 but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Recipient has a valid license - Make sure the recipient has an Office 365 license assigned to them. The recipient's email admin can use the Office 365 admin center to assign a license (Users > Active Users > select the recipient > Assigned License > Edit).

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see Fix email delivery issues for error code 5.1.10 in Office 365.

Original Message Details

Created Date:	**10/11/2017 4:20:41 PM**
Sender Address:	**dravis.samantha@epa.gov**
Recipient Address:	**Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov**
Subject:	**RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6024 - Direct Final / Administrator's Signature / Review #1 / OCSPP - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Products')**

Error Details

Reported error:	***550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient not found by SMTP address lookup***
DSN generated by:	**MWHPR09MB1486.namprd09.prod.outlook.com**

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELAY TIME
1	10/11/2017 4:20:42 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1469.namprd09.prod.outlook.com	mapi	1 sec
2	10/11/2017 4:20:42 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1469.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256	*

Original Message Headers

```
Authentication-Results: epa.gov; dkim=none (message not signed)
 header.d=none;epa.gov; dmarc=none action=none header.from=epa.gov;
Received: from MWHPR09MB1469.namprd09.prod.outlook.com (10.173.50.19) by
 MWHPR09MB1486.namprd09.prod.outlook.com (10.173.50.136) with Microsoft SMTP
 Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384_P256) id
 15.20.77.7; Wed, 11 Oct 2017 16:20:42 +0000
Received: from MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) by
 MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) with mapi id
 15.20.0077.020; Wed, 11 Oct 2017 16:20:42 +0000
Content-Type: application/ms-tnef; name="winmail.dat"
Content-Transfer-Encoding: binary
From: "Dravis, Samantha" <dravis.samantha@epa.gov>
To: "Owens, Nicole" <Owens.Nicole@epamail.epa.gov>, Samantha Dravis
        <Dravis.Samantha@epamail.epa.gov>
CC: Brittany Bolen <Bolen.Brittany@epamail.epa.gov>, "Kenny, Shannon"
        <Kenny.Shannon@epa.gov>, "Kime, Robin" <Kime.Robin@epa.gov>,
"Pritchard,
 Eileen" <Pritchard.Eileen@epa.gov>, "Rees, Sarah" <rees.sarah@epa.gov>,
        "Nickerson, William" <Nickerson.William@epa.gov>, "Corrales, Mark"
        <Corrales.Mark@epa.gov>, "Curry, Bridgid" <Curry.Bridgid@epa.gov>,
"Peffers,
 Mel" <Peffers.Mel@epa.gov>, "Jutras, Nathaniel" <Jutras.Nathaniel@epa.gov>
Subject: RE: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 6024 - Direct Final / Administrator's Signature / Review #1 / OCSPP -
 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for
 Composite Wood Products')
Thread-Topic: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 6024 - Direct Final / Administrator's Signature / Review #1 / OCSPP -
 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for
 Composite Wood Products')
Thread-Index: AQHTQqTydJoy4GEWw0Gz0AHlZB0pNqLe1HVQ
Date: Wed, 11 Oct 2017 16:20:41 +0000
Message-ID:
<MWHPR09MB1469A8A3B44A39E9431BD7DBE64A0@MWHPR09MB1469.namprd09.prod.outlook.com>
References: <OF03740067.33485124-ON852581B6.00548E29-
852581B6.00548F93@epamail.epa.gov>
In-Reply-To: <OF03740067.33485124-ON852581B6.00548E29-
852581B6.00548F93@epamail.epa.gov>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator:
<MWHPR09MB1469A8A3B44A39E9431BD7DBE64A0@MWHPR09MB1469.namprd09.prod.outlook.com>
MIME-Version: 1.0
```

X-Originating-IP: [2620:117:5010:194::d017]
X-MS-PublicTrafficType: Email
X-Microsoft-Exchange-Diagnostics:
1;MWHPR09MB1469;35:DHYIi6PKRBF/aUgDT10kTssdjOsz8S2qqhjLeAc/ozKPmuuaSVrD8NQdF48UX66mF9gylR2
X-MS-Exchange-Antispam-SRFA-Diagnostics: SSOS;SSOR;
X-Forefront-Antispam-Report:
	SFV:SKI;SCL:-1;SFV:SKI;SFS:;DIR:INB;SFP:;SCL:-
1;SRVR:MWHPR09MB1486;H:MWHPR09MB1469.namprd09.prod.outlook.com;FPR:;SPF:None;LANG:en;
Return-Path: dravis.samantha@epa.gov
X-MS-Office365-Filtering-Correlation-Id: 34be8722-b407-4ea2-c350-08d510c404a2
X-Microsoft-Antispam:
	UriScan:;BCL:0;PCL:0;RULEID:(22001)(2017030254152)(2017052603199)(49563074)(2017
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1486;3:90UBEXzOeG1yVsg902Juf0gT0JqY4puUVTGQeub+QnSvV0/oocjSkvmm6xH5TO
X-MS-TrafficTypeDiagnostic: MWHPR09MB1486:
X-Exchange-Antispam-Report-Test:
	UriScan:(141739891587465)(100405760836317)(21748063052155)(229425074694992);
X-Exchange-Antispam-Report-CFA-Test:
	BCL:0;PCL:0;RULEID:(100000700101)(100105000095)(100000701101)(100105300095)(1000
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1486;4:NWRaSZSiJ/PjdrmM3f7Z3ySXjS2bZlNezAnXVEHn8jrvIZSufhChkkfxXjwVCn
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1486;5:4g7zKJ/ZqZYyQJcp75B1fRFGRllX5ryEBV19yTvPwD9+7Y8+GZfR21EKs/RjRa
SpamDiagnosticOutput: 1:0
X-MS-Exchange-CrossTenant-OriginalArrivalTime: 11 Oct 2017 16:20:41.8797
 (UTC)
X-MS-Exchange-CrossTenant-FromEntityHeader: Hosted
X-MS-Exchange-CrossTenant-Id: 88b378b3-6748-4867-acf9-76aacbeca6a7
X-MS-Exchange-Transport-CrossTenantHeadersStamped: MWHPR09MB1486

To: Owens, Nicole[Owens.Nicole@epa.gov]; Samantha Dravis[Dravis.Samantha@epamail.epa.gov]
Cc: Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Rees, Sarah[rees.sarah@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; Peffers, Mel[Peffers.Mel@epa.gov]; Jutras, Nathaniel[Jutras.Nathaniel@epa.gov]
From: Dravis, Samantha
Sent: Wed 10/11/2017 4:20:41 PM
Subject: RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6024 - Direct Final / Administrator's Signature / Review #1 / OCSPP - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Products')

Approved

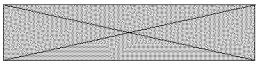
From: Nicole Owens [mailto:Owens.Nicole@epamail.epa.gov]
Sent: Wednesday, October 11, 2017 11:24 AM
To: Samantha Dravis <Dravis.Samantha@epamail.epa.gov>
Cc: Brittany Bolen <Bolen.Brittany@epamail.epa.gov>; Kenny, Shannon <Kenny.Shannon@epa.gov>; Kime, Robin <Kime.Robin@epa.gov>; Pritchard, Eileen <Pritchard.Eileen@epa.gov>; Rees, Sarah <rees.sarah@epa.gov>; Nickerson, William <Nickerson.William@epa.gov>; Corrales, Mark <Corrales.Mark@epa.gov>; Curry, Bridgid <Curry.Bridgid@epa.gov>; Peffers, Mel <Peffers.Mel@epa.gov>; Jutras, Nathaniel <Jutras.Nathaniel@epa.gov>
Subject: OP Policy Review - ORPM Office Director Approval Notification (SAN 6024 - Direct Final / Administrator's Signature / Review #1 / OCSPP - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Products')

Approval for Administrator's Signature: Direct Final - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Products'

This Policy Review is ready for OP Associate Administrator Approval.

Link to Policy Review Document-> 

To: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]
From: Microsoft Outlook
Sent: Wed 10/11/2017 4:20:36 PM
Subject: Undeliverable: RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6024 - NPRM / Administrator's Signature / Review #1 / OCSPP - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Products')
RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6024 - NPRM / Administrator's Signature / Review #1 / OCSPP - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Products')



Your message couldn't be delivered to multiple recipients.

The recipients weren't found at epamail.epa.gov.

dravis.samantha	**Office 365**	**Recipients**
Action Required	Recipients	

Unknown To address

Couldn't deliver to the following recipients:
Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- **Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "To send this message again, click here." Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click Send.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: Fix email delivery issues for error code 5.1.10 in Office 365, and then send the message again. Retype the entire recipient address before selecting Send.

If the problem continues, forward this message to your email admin. If

you're an email admin, refer to the More Info for Email Admins section below.

Was this helpful? *Send feedback to Microsoft.*

More Info for Email Admins

Status code: 550 5.1.10

This error occurs because the sender sent a message to an email address hosted by Office 365 but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Recipient has a valid license - Make sure the recipient has an Office 365 license assigned to them. The recipient's email admin can use the Office 365 admin center to assign a license (Users > Active Users > select the recipient > Assigned License > Edit).

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see Fix email delivery issues for error code 5.1.10 in Office 365.

Original Message Details

Created Date:	**10/11/2017 4:20:34 PM**
Sender Address:	**dravis.samantha@epa.gov**
Recipient Address:	**Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov**
Subject:	**RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6024 - NPRM / Administrator's Signature / Review #1 / OCSPP - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Products')**

Error Details

Reported error:	***550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient not found by SMTP address lookup***
DSN generated by:	**MWHPR09MB1488.namprd09.prod.outlook.com**

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELAY TIME
1	10/11/2017 4:20:34 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1469.namprd09.prod.outlook.com	mapi	*
2	10/11/2017 4:20:36 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1469.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_25	2 sec

Original Message Headers

```
Authentication-Results: epa.gov; dkim=none (message not signed)
 header.d=none;epa.gov; dmarc=none action=none header.from=epa.gov;
Received: from MWHPR09MB1469.namprd09.prod.outlook.com (10.173.50.19) by
 MWHPR09MB1488.namprd09.prod.outlook.com (10.173.50.138) with Microsoft SMTP
 Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384_P256) id
 15.20.77.7; Wed, 11 Oct 2017 16:20:36 +0000
Received: from MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) by
 MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) with mapi id
 15.20.0077.020; Wed, 11 Oct 2017 16:20:34 +0000
Content-Type: application/ms-tnef; name="winmail.dat"
Content-Transfer-Encoding: binary
From: "Dravis, Samantha" <dravis.samantha@epa.gov>
To: "Owens, Nicole" <Owens.Nicole@epamail.epa.gov>, Samantha Dravis
        <Dravis.Samantha@epamail.epa.gov>
CC: Brittany Bolen <Bolen.Brittany@epamail.epa.gov>, "Kenny, Shannon"
        <Kenny.Shannon@epa.gov>, "Kime, Robin" <Kime.Robin@epa.gov>,
"Pritchard,
 Eileen" <Pritchard.Eileen@epa.gov>, "Rees, Sarah" <rees.sarah@epa.gov>,
        "Nickerson, William" <Nickerson.William@epa.gov>, "Corrales, Mark"
        <Corrales.Mark@epa.gov>, "Curry, Bridgid" <Curry.Bridgid@epa.gov>,
"Peffers,
 Mel" <Peffers.Mel@epa.gov>, "Jutras, Nathaniel" <Jutras.Nathaniel@epa.gov>
Subject: RE: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 6024 - NPRM / Administrator's Signature / Review #1 / OCSPP - 'Voluntary
 Consensus Standards Update; Formaldehyde Emission Standards for Composite
 Wood Products')
Thread-Topic: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 6024 - NPRM / Administrator's Signature / Review #1 / OCSPP - 'Voluntary
 Consensus Standards Update; Formaldehyde Emission Standards for Composite
 Wood Products')
Thread-Index: AQHTQqUFh/KKeVWifkS2eVLe3rstuqLe1GoQ
Date: Wed, 11 Oct 2017 16:20:34 +0000
Message-ID:
<MWHPR09MB146973E37E6ED4A1B1D444DCE64A0@MWHPR09MB1469.namprd09.prod.outlook.com>
References: <OF4458C466.C0881944-ON852581B6.00549AB8-
852581B6.00549C29@epamail.epa.gov>
In-Reply-To: <OF4458C466.C0881944-ON852581B6.00549AB8-
852581B6.00549C29@epamail.epa.gov>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator:
<MWHPR09MB146973E37E6ED4A1B1D444DCE64A0@MWHPR09MB1469.namprd09.prod.outlook.com>
MIME-Version: 1.0
```

X-Originating-IP: [2620:117:5010:194::d017]
X-MS-PublicTrafficType: Email
X-Microsoft-Exchange-Diagnostics:
1;MWHPR09MB1469;35:jiOIPZcIkSNFtB5e2tg7+dtQ+LNPJhtJuwVt5ui1rWqH3cdPztGJABWNMec8Q3jA+hnCCny
X-MS-Exchange-Antispam-SRFA-Diagnostics: SSOS;SSOR;
X-Forefront-Antispam-Report:
	SFV:SKI;SCL:-1;SFV:SKI;SFS:;DIR:INB;SFP:;SCL:-
1;SRVR:MWHPR09MB1488;H:MWHPR09MB1469.namprd09.prod.outlook.com;FPR:;SPF:None;LANG:en;
Return-Path: dravis.samantha@epa.gov
X-MS-Office365-Filtering-Correlation-Id: 3bcc18c4-39d4-4a36-40c7-08d510c40055
X-Microsoft-Antispam:
	UriScan:;BCL:0;PCL:0;RULEID:(22001)(2017030254152)(2017052603199)(49563074)(2017
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1488;3:W6eNUDAgymYmOlaBezPAN3fRnCDbQ4uoCReI5xA9SnpfL5vlxkNhGoTacKE+a6
X-MS-TrafficTypeDiagnostic: MWHPR09MB1488:
X-Exchange-Antispam-Report-Test:
	UriScan:(141739891587465)(100405760836317)(21748063052155)(229425074694992);
X-Exchange-Antispam-Report-CFA-Test:
	BCL:0;PCL:0;RULEID:(100000700101)(100105000095)(100000701101)(100105300095)(1000
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1488;4:UETtqS9qnpn2IW0KwaLb9WZv15E3RdKUFN8InxMX7HpUtGpWiZa7w+EuT9wzgw
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1488;5:jpBcy8zJH2M32PZkGpI4fAQWJ89yZBEG9788zhfNFm2PZMZbx/VcmZXqRl3LfL
SpamDiagnosticOutput: 1:0
X-MS-Exchange-CrossTenant-OriginalArrivalTime: 11 Oct 2017 16:20:34.6764
 (UTC)
X-MS-Exchange-CrossTenant-FromEntityHeader: Hosted
X-MS-Exchange-CrossTenant-Id: 88b378b3-6748-4867-acf9-76aacbeca6a7
X-MS-Exchange-Transport-CrossTenantHeadersStamped: MWHPR09MB1488

To: Owens, Nicole[Owens.Nicole@epa.gov]; Samantha Dravis[Dravis.Samantha@epamail.epa.gov]
Cc: Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Rees, Sarah[rees.sarah@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; Peffers, Mel[Peffers.Mel@epa.gov]; Jutras, Nathaniel[Jutras.Nathaniel@epa.gov]
From: Dravis, Samantha
Sent: Wed 10/11/2017 4:20:34 PM
Subject: RE: OP Policy Review - ORPM Office Director Approval Notification (SAN 6024 - NPRM / Administrator's Signature / Review #1 / OCSPP - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Products')

Approved

From: Nicole Owens [mailto:Owens.Nicole@epamail.epa.gov]
Sent: Wednesday, October 11, 2017 11:24 AM
To: Samantha Dravis <Dravis.Samantha@epamail.epa.gov>
Cc: Brittany Bolen <Bolen.Brittany@epamail.epa.gov>; Kenny, Shannon <Kenny.Shannon@epa.gov>; Kime, Robin <Kime.Robin@epa.gov>; Pritchard, Eileen <Pritchard.Eileen@epa.gov>; Rees, Sarah <rees.sarah@epa.gov>; Nickerson, William <Nickerson.William@epa.gov>; Corrales, Mark <Corrales.Mark@epa.gov>; Curry, Bridgid <Curry.Bridgid@epa.gov>; Peffers, Mel <Peffers.Mel@epa.gov>; Jutras, Nathaniel <Jutras.Nathaniel@epa.gov>
Subject: OP Policy Review - ORPM Office Director Approval Notification (SAN 6024 - NPRM / Administrator's Signature / Review #1 / OCSPP - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Products')

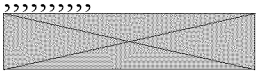
Approval for Administrator's Signature: NPRM - 'Voluntary Consensus Standards Update; Formaldehyde Emission Standards for Composite Wood Products'

This Policy Review is ready for OP Associate Administrator Approval.

Link to Policy Review Document-> 

To: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]
From: Microsoft Outlook
Sent: Tue 9/26/2017 6:01:43 PM
Subject: Undeliverable: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6250 - Final / Administrator's Signature / Review #1 / R09 - 'Coronado Generating Station Regional Haze')
Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6250 - Final / Administrator's Signature / Review #1 / R09 - 'Coronado Generating Station Regional Haze')

.....
;;;;;;;;;;



Your message couldn't be delivered to multiple recipients.

The recipients weren't found at epamail.epa.gov.

dravis.samantha	**Office 365**	**Recipients**
Action Required		Recipients

Unknown To address

Couldn't deliver to the following recipients:
Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- **Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "To send this message again, click here." Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click Send.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: Fix email delivery issues for error code 5.1.10 in Office 365, and then send the message again. Retype the entire recipient address before selecting Send.

If the problem continues, forward this message to your email admin. If you're an email admin, refer to the More Info for Email Admins section

below.

Was this helpful? *Send feedback to Microsoft.*

More Info for Email Admins

Status code: 550 5.1.10

This error occurs because the sender sent a message to an email address hosted by Office 365 but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Recipient has a valid license - Make sure the recipient has an Office 365 license assigned to them. The recipient's email admin can use the Office 365 admin center to assign a license (Users > Active Users > select the recipient > Assigned License > Edit).

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see Fix email delivery issues for error code 5.1.10 in Office 365.

Original Message Details

Created Date:	**9/26/2017 6:01:41 PM**
Sender Address:	**dravis.samantha@epa.gov**
Recipient Address:	**Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov**
Subject:	**Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6250 - Final / Administrator's Signature / Review #1 / R09 - 'Coronado Generating Station Regional Haze')**

Error Details

Reported error:	***550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient not found by SMTP address lookup***

DSN generated by:

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELAY TIME
1	9/26/2017 6:01:41 PM	BN6PR09MB1460.namprd09.prod.outlook.com	BN6PR09MB1460.namprd09.prod.outlook.com	mapi	*
2	9/26/2017 6:01:42 PM	BN6PR09MB1460.namprd09.prod.outlook.com	BN6PR09MB1475.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_25	1 sec

Original Message Headers

```
Authentication-Results: epa.gov; dkim=none (message not signed)
 header.d=none;epa.gov; dmarc=none action=none header.from=epa.gov;
Received: from BN6PR09MB1460.namprd09.prod.outlook.com (10.173.202.136) by
 BN6PR09MB1475.namprd09.prod.outlook.com (10.173.202.139) with Microsoft SMTP
 Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384_P256) id
 15.20.77.7; Tue, 26 Sep 2017 18:01:42 +0000
Received: from BN6PR09MB1460.namprd09.prod.outlook.com ([10.173.202.136]) by
 BN6PR09MB1460.namprd09.prod.outlook.com ([10.173.202.136]) with mapi id
 15.20.0077.011; Tue, 26 Sep 2017 18:01:41 +0000
Content-Type: application/ms-tnef; name="winmail.dat"
Content-Transfer-Encoding: binary
From: "Dravis, Samantha"
To: "Rees, Sarah"
CC: Samantha Dravis , Brittany Bolen
          , "Kenny, Shannon" ,
          "Kime, Robin" , "Pritchard, Eileen"
          , "Nickerson, William" ,
          "Corrales, Mark" , "Curry, Bridgid"
          , "Owens, Nicole" , "VanLare,
 Paula" , "Adams, Darryl"
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 6250 - Final / Administrator's Signature / Review #1 / R09 - 'Coronado
 Generating Station Regional Haze')
Thread-Topic: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 6250 - Final / Administrator's Signature / Review #1 / R09 - 'Coronado
 Generating Station Regional Haze')
Thread-Index: AQHTNvEdbrYceEDWn0S03tebE4y8g6LHdSEy
Date: Tue, 26 Sep 2017 18:01:41 +0000
Message-ID: <1E8153FE-8B8C-43F5-97FD-042E2C6D08FB@epa.gov>
References:
In-Reply-To:
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator: <1E8153FE-8B8C-43F5-97FD-042E2C6D08FB@epa.gov>
MIME-Version: 1.0
X-Originating-IP: [161.80.1.11]
X-MS-PublicTrafficType: Email
X-Microsoft-Exchange-Diagnostics:
1;BN6PR09MB1460;35:koJV4j7t+qcssA9jx7y/uwfNRoTkNCo53WGglpTfU8aLaVKbzfdaPzO++wFXtQkRSQalB6y
X-MS-Exchange-Antispam-SRFA-Diagnostics: SSOS;SSOR;
X-Forefront-Antispam-Report:
```

SFV:SKI;SCL:-1;SFV:SKI;SFS:;DIR:INB;SFP:;SCL:-
1;SRVR:BN6PR09MB1475;H:BN6PR09MB1460.namprd09.prod.outlook.com;FPR:;SPF:None;LANG:en;
Return-Path: dravis.samantha@epa.gov
X-MS-Office365-Filtering-Correlation-Id: 360811b9-2bb6-41db-9185-08d50508a455
X-Microsoft-Antispam:
UriScan:;BCL:0;PCL:0;RULEID:(22001)(2017030254152)(2017052603199)(49563074)(2017
X-Microsoft-Exchange-Diagnostics:
1;BN6PR09MB1475;3:CwUOLmI9IWHhJgHdHbJC+LDOTdeY69pyhnWlluRN//ha4rOnvPGyKsQABsL/F7
X-MS-TrafficTypeDiagnostic: BN6PR09MB1475:
X-Exchange-Antispam-Report-Test: UriScan:(229425074694992);
X-Exchange-Antispam-Report-CFA-Test:
BCL:0;PCL:0;RULEID:(100000700101)(100105000095)(100000701101)(100105300095)(1000
X-Microsoft-Exchange-Diagnostics:
1;BN6PR09MB1475;4:PAQ4oW0jGXfPCVorPeeHczY9f9Dt/9nrmfmRer8J9W/jRC1ruENkf6FrMSJ1Uj
X-Microsoft-Exchange-Diagnostics:
1;BN6PR09MB1475;5:67XnXSC0b6QO7iB8b2yhUm3OOIy3W0iQ4Cz2vK70rcEpF/VZanUW6Mo5T42DdS
SpamDiagnosticOutput: 1:0
X-MS-Exchange-CrossTenant-OriginalArrivalTime: 26 Sep 2017 18:01:41.7116
(UTC)
X-MS-Exchange-CrossTenant-FromEntityHeader: Hosted
X-MS-Exchange-CrossTenant-Id: 88b378b3-6748-4867-acf9-76aacbeca6a7
X-MS-Exchange-Transport-CrossTenantHeadersStamped: BN6PR09MB1475

To: Rees, Sarah[rees.sarah@epa.gov]
Cc: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; Owens, Nicole[Owens.Nicole@epa.gov]; VanLare, Paula[VanLare.Paula@epa.gov]; Adams, Darryl[Adams.Darryl@epa.gov]
From: Dravis, Samantha
Sent: Tue 9/26/2017 6:01:41 PM
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6250 - Final / Administrator's Signature / Review #1 / R09 - 'Coronado Generating Station Regional Haze')

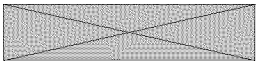
;;
Approved!

Sent from my iPad

On Sep 26, 2017, at 1:58 PM, Sarah Rees <Rees.Sarah@epamail.epa.gov> wrote:

> Approval for Administrator's Signature: Final - 'Coronado Generating Station Regional Haze'
>
> This Policy Review is ready for OP Associate Administrator Approval.
>
> Link to Policy Review Document->

To: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]
From: Microsoft Outlook
Sent: Tue 9/19/2017 12:57:32 PM
Subject: Undeliverable: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5965 - NODA / OMB Review / Review #1 / OAR - 'RFS Volume Standards - 2018 and BBD for 2019')
Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5965 - NODA / OMB Review / Review #1 / OAR - 'RFS Volume Standards - 2018 and BBD for 2019')



Your message couldn't be delivered to multiple recipients.

The recipients weren't found at epamail.epa.gov.

dravis.samantha	**Office 365**	**Recipients**
Action Required	Recipients	

Unknown To address

Couldn't deliver to the following recipients:
Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- **Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "To send this message again, click here." Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click Send.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: Fix email delivery issues for error code 5.1.10 in Office 365, and then send the message again. Retype the entire recipient address before selecting Send.

If the problem continues, forward this message to your email admin. If you're an email admin, refer to the More Info for Email Admins section below.

Was this helpful? *Send feedback to Microsoft.*

More Info for Email Admins

Status code: 550 5.1.10

This error occurs because the sender sent a message to an email address hosted by Office 365 but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Recipient has a valid license - Make sure the recipient has an Office 365 license assigned to them. The recipient's email admin can use the Office 365 admin center to assign a license (Users > Active Users > select the recipient > Assigned License > Edit).

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see Fix email delivery issues for error code 5.1.10 in Office 365.

Original Message Details

Created Date:	**9/19/2017 12:57:30 PM**
Sender Address:	**dravis.samantha@epa.gov**
Recipient Address:	**Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov**
Subject:	**Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5965 - NODA / OMB Review / Review #1 / OAR - 'RFS Volume Standards - 2018 and BBD for 2019')**

Error Details

Reported error:	***550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient not found by SMTP address lookup***
DSN generated by:	**MWHPR09MB1485.namprd09.prod.outlook.com**

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELAY TIME
1	9/19/2017 12:57:30 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1469.namprd09.prod.outlook.com	Mapi	*
2	9/19/2017 12:57:32 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1485.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_25	2 sec

Original Message Headers

```
Authentication-Results: epa.gov; dkim=none (message not signed)
 header.d=none;epa.gov; dmarc=none action=none header.from=epa.gov;
Received: from MWHPR09MB1469.namprd09.prod.outlook.com (10.173.50.19) by
 MWHPR09MB1485.namprd09.prod.outlook.com (10.173.50.135) with Microsoft SMTP
 Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384_P256) id
 15.20.77.7; Tue, 19 Sep 2017 12:57:32 +0000
Received: from MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) by
 MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) with mapi id
 15.20.0056.016; Tue, 19 Sep 2017 12:57:30 +0000
Content-Type: application/ms-tnef; name="winmail.dat"
Content-Transfer-Encoding: binary
From: "Dravis, Samantha" <dravis.samantha@epa.gov>
To: "Owens, Nicole" <Owens.Nicole@epa.gov>
CC: Samantha Dravis <Dravis.Samantha@epamail.epa.gov>, Brittany Bolen
          <Bolen.Brittany@epamail.epa.gov>, "Kenny, Shannon"
<Kenny.Shannon@epa.gov>,
          "Kime, Robin" <Kime.Robin@epa.gov>, "Pritchard, Eileen"
          <Pritchard.Eileen@epa.gov>, "Rees, Sarah" <rees.sarah@epa.gov>,
"Nickerson,
 William" <Nickerson.William@epa.gov>, "Corrales, Mark"
          <Corrales.Mark@epa.gov>, "Curry, Bridgid" <Curry.Bridgid@epa.gov>,
"Lamson,
 Amy" <Lamson.Amy@epa.gov>, "Jutras, Nathaniel" <Jutras.Nathaniel@epa.gov>
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 5965 - NODA / OMB Review / Review #1 / OAR - 'RFS Volume Standards -
 2018 and BBD for 2019')
Thread-Topic: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 5965 - NODA / OMB Review / Review #1 / OAR - 'RFS Volume Standards -
 2018 and BBD for 2019')
Thread-Index: AQHTMKpdKEMJ0fmQF0uN3AZ6CeIDmaK8LGAs
Date: Tue, 19 Sep 2017 12:57:30 +0000
Message-ID: <307725CA-198A-4825-96D6-F82B95569672@epa.gov>
References: <OF9416F882.2D6B9DEE-ON8525819F.006472EE-
8525819F.00648898@epamail.epa.gov>
In-Reply-To: <OF9416F882.2D6B9DEE-ON8525819F.006472EE-
8525819F.00648898@epamail.epa.gov>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator: <307725CA-198A-4825-96D6-F82B95569672@epa.gov>
MIME-Version: 1.0
X-Originating-IP: [2600:1003:b01e:9e0:89b0:7e37:7091:1330]
X-MS-PublicTrafficType: Email
```

X-Microsoft-Exchange-Diagnostics:
1;MWHPR09MB1469;35:i/4zmTHMb8x8rcL1nZ3JTijcju8AE0eaSdWDW6z74OMXtgDNsay4CxSm0NIB/Ot8SJ/JgSv
X-MS-Exchange-Antispam-SRFA-Diagnostics: SSOS;SSOR;
X-Forefront-Antispam-Report:
	SFV:SKI;SCL:-1;SFV:SKI;SFS:;DIR:INB;SFP:;SCL:-
1;SRVR:MWHPR09MB1485;H:MWHPR09MB1469.namprd09.prod.outlook.com;FPR:;SPF:None;LANG:en;
Return-Path: dravis.samantha@epa.gov
X-MS-Office365-Filtering-Correlation-Id: 8ea97f9b-8f2c-4e85-aa94-08d4ff5dfd11
X-Microsoft-Antispam:
	UriScan:;BCL:0;PCL:0;RULEID:(300000500095)(300135000095)(300000501095)(300135300
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1485;3:nv5YnN3mXPcatYdIAzr5qvjdy5utIdXeKh08NS1nwHGcxD4UIdhTpkNaVGAr5m
X-MS-TrafficTypeDiagnostic: MWHPR09MB1485:
X-Exchange-Antispam-Report-Test: UriScan:(229425074694992);
X-Exchange-Antispam-Report-CFA-Test:
	BCL:0;PCL:0;RULEID:(100000700101)(100105000095)(100000701101)(100105300095)(1000
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1485;4:uAb6qcboJsk1nbahdRg9H4BRKjCy02QzKKbEa3BCMH1IbfJREQLd8GoDMBlsJR
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1485;5:/68RUF/nMLTOf91uNVkIsPxiafU855KZDBJ8kAtRPt4HFRukXHd0C4kMKfQje3
SpamDiagnosticOutput: 1:0
X-MS-Exchange-CrossTenant-OriginalArrivalTime: 19 Sep 2017 12:57:30.7511
 (UTC)
X-MS-Exchange-CrossTenant-FromEntityHeader: Hosted
X-MS-Exchange-CrossTenant-Id: 88b378b3-6748-4867-acf9-76aacbeca6a7
X-MS-Exchange-Transport-CrossTenantHeadersStamped: MWHPR09MB1485

To: Owens, Nicole[Owens.Nicole@epa.gov]
Cc: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Rees, Sarah[rees.sarah@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; Lamson, Amy[Lamson.Amy@epa.gov]; Jutras, Nathaniel[Jutras.Nathaniel@epa.gov]
From: Dravis, Samantha
Sent: Tue 9/19/2017 12:57:30 PM
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5965 - NODA / OMB Review / Review #1 / OAR - 'RFS Volume Standards - 2018 and BBD for 2019')

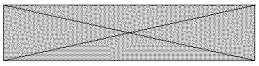
Approved

Sent from my iPad

On Sep 18, 2017, at 2:17 PM, Nicole Owens <Owens.Nicole@epamail.epa.gov> wrote:

> Approval for OMB Transmittal: NODA - 'RFS Volume Standards - 2018 and BBD for 2019'
>
> This Policy Review is ready for OP Associate Administrator Approval.
>
> Link to Policy Review Document-> <doclink.gif>

To: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]
From: Microsoft Outlook
Sent: Tue 9/12/2017 5:10:14 PM
Subject: Undeliverable: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5422.1 - Final / Administrator's Signature / Review #1 / OW - 'Postponement of Certain Compliance Dates for Steam Electric ELG')
Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5422.1 - Final / Administrator's Signature / Review #1 / OW - 'Postponement of Certain Compliance Dates for Steam Electric ELG')



Your message couldn't be delivered to multiple recipients.

The recipients weren't found at epamail.epa.gov.

dravis.samantha	**Office 365**	**Recipients**
Action Required	Recipients	

Unknown To address

Couldn't deliver to the following recipients:
Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- **Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "To send this message again, click here." Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click Send.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: Fix email delivery issues for error code 5.1.10 in Office 365, and then send the message again. Retype the entire recipient address before selecting Send.

If the problem continues, forward this message to your email admin. If you're an email admin, refer to the More Info for Email Admins section

below.

Was this helpful? *Send feedback to Microsoft.*

More Info for Email Admins

Status code: 550 5.1.10

This error occurs because the sender sent a message to an email address hosted by Office 365 but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Recipient has a valid license - Make sure the recipient has an Office 365 license assigned to them. The recipient's email admin can use the Office 365 admin center to assign a license (Users > Active Users > select the recipient > Assigned License > Edit).

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see Fix email delivery issues for error code 5.1.10 in Office 365.

Original Message Details

Created Date:	**9/12/2017 5:10:11 PM**
Sender Address:	**dravis.samantha@epa.gov**
Recipient Address:	**Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov**
Subject:	**Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5422.1 - Final / Administrator's Signature / Review #1 / OW - 'Postponement of Certain Compliance Dates for Steam Electric ELG')**

Error Details

Reported error:	***550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient not found by SMTP address lookup***

DSN generated by:

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELAY TIME
1	9/12/2017 5:10:11 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1469.namprd09.prod.outlook.com	mapi	*
2	9/12/2017 5:10:13 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1279.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_25	2 sec

Original Message Headers

```
Authentication-Results: epa.gov; dkim=none (message not signed)
 header.d=none;epa.gov; dmarc=none action=none header.from=epa.gov;
Received: from MWHPR09MB1469.namprd09.prod.outlook.com (10.173.50.19) by
 MWHPR09MB1279.namprd09.prod.outlook.com (10.172.50.21) with Microsoft SMTP
 Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384_P256) id
 15.20.35.12; Tue, 12 Sep 2017 17:10:13 +0000
Received: from MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) by
 MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) with mapi id
 15.20.0035.021; Tue, 12 Sep 2017 17:10:11 +0000
Content-Type: application/ms-tnef; name="winmail.dat"
Content-Transfer-Encoding: binary
From: "Dravis, Samantha" <dravis.samantha@epa.gov>
To: "Rees, Sarah" <rees.sarah@epa.gov>
CC: Samantha Dravis <Dravis.Samantha@epamail.epa.gov>, Brittany Bolen
          <Bolen.Brittany@epamail.epa.gov>, "Kenny, Shannon"
<Kenny.Shannon@epa.gov>,
          "Kime, Robin" <Kime.Robin@epa.gov>, "Pritchard, Eileen"
          <Pritchard.Eileen@epa.gov>, "Nickerson, William"
<Nickerson.William@epa.gov>,
          "Corrales, Mark" <Corrales.Mark@epa.gov>, "Curry, Bridgid"
          <Curry.Bridgid@epa.gov>, "Owens, Nicole" <Owens.Nicole@epa.gov>,
"Thundiyil,
 Karen" <Thundiyil.Karen@epa.gov>, "Muellerleile, Caryn"
          <Muellerleile.Caryn@epa.gov>
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 5422.1 - Final / Administrator's Signature / Review #1 / OW -
 'Postponement of Certain Compliance Dates for Steam Electric ELG')
Thread-Topic: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 5422.1 - Final / Administrator's Signature / Review #1 / OW -
 'Postponement of Certain Compliance Dates for Steam Electric ELG')
Thread-Index: AQHTK+l45I+kEG4jz0aynxzR16xqPKKxfCnU
Date: Tue, 12 Sep 2017 17:10:11 +0000
Message-ID: <07C13C0E-A28B-4B70-A03F-D44FE50D5D00@epa.gov>
References: <OFCF6F2765.0BA562F8-ON85258199.005DF652-
85258199.005DF819@epamail.epa.gov>
In-Reply-To: <OFCF6F2765.0BA562F8-ON85258199.005DF652-
85258199.005DF819@epamail.epa.gov>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator: <07C13C0E-A28B-4B70-A03F-D44FE50D5D00@epa.gov>
MIME-Version: 1.0
```

X-Originating-IP: [2600:1003:b018:3f55:e935:9bb0:a1d8:f2e0]
X-MS-PublicTrafficType: Email
X-Microsoft-Exchange-Diagnostics:
1;MWHPR09MB1469;35:TLIyqtd55XcsnarMrsj/YQwIkfRY7hRz9C04kXxxkOMVQBUcAh+Hh7uM70AoEeWk5IlzhHC
X-MS-Exchange-Antispam-SRFA-Diagnostics: SSOS;SSOR;
X-Forefront-Antispam-Report:
	SFV:SKI;SCL:-1;SFV:SKI;SFS:;DIR:INB;SFP:;SCL:-
1;SRVR:MWHPR09MB1279;H:MWHPR09MB1469.namprd09.prod.outlook.com;FPR:;SPF:None;LANG:en;
Return-Path: dravis.samantha@epa.gov
X-MS-Office365-Filtering-Correlation-Id: 49c9ebbd-d489-4177-5c93-08d4fa0120a1
X-Microsoft-Antispam:
	UriScan:;BCL:0;PCL:0;RULEID:(300000500095)(300135000095)(300000501095)(300135300
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1279;3:SQy8GaIytuwNYiMCJhImOgQvn7Nza1vLr3IbISAsyRsjFWy16F6MWwu1S1ZiZB
X-MS-TrafficTypeDiagnostic: MWHPR09MB1279:
X-Exchange-Antispam-Report-Test: UriScan:(229425074694992);
X-Exchange-Antispam-Report-CFA-Test:
	BCL:0;PCL:0;RULEID:(100000700101)(100105000095)(100000701101)(100105300095)(1000
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1279;4:xP+F0U8c3guuKDDC8uKocKNDCULH5Qb2ZpKZcTx8js7WDBZyuJz8UDUjlt0WB6
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1279;5:N8KjB2LXW6fkdCDQtUMahAJLSHjzsayqhrPML1B5cvLFJM5VjW1p2Wn7VgS5CW
SpamDiagnosticOutput: 1:0
X-MS-Exchange-CrossTenant-OriginalArrivalTime: 12 Sep 2017 17:10:11.4189
 (UTC)
X-MS-Exchange-CrossTenant-FromEntityHeader: Hosted
X-MS-Exchange-CrossTenant-Id: 88b378b3-6748-4867-acf9-76aacbeca6a7
X-MS-Exchange-Transport-CrossTenantHeadersStamped: MWHPR09MB1279

To: Rees, Sarah[rees.sarah@epa.gov]
Cc: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; Owens, Nicole[Owens.Nicole@epa.gov]; Thundiyil, Karen[Thundiyil.Karen@epa.gov]; Muellerleile, Caryn[Muellerleile.Caryn@epa.gov]
From: Dravis, Samantha
Sent: Tue 9/12/2017 5:10:11 PM
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5422.1 - Final / Administrator's Signature / Review #1 / OW - 'Postponement of Certain Compliance Dates for Steam Electric ELG')

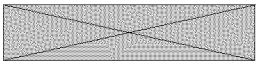
Approved. Thank you.

Sent from my iPhone

On Sep 12, 2017, at 1:06 PM, Sarah Rees <Rees.Sarah@epamail.epa.gov> wrote:

> Approval for Administrator's Signature: Final - 'Postponement of Certain Compliance Dates for Steam Electric ELG'
>
> This Policy Review is ready for OP Associate Administrator Approval.
>
> Link to Policy Review Document-> <doclink.gif>

To: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]
From: Microsoft Outlook
Sent: Thur 9/21/2017 8:31:31 PM
Subject: Undeliverable: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5719.11 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three-Month Stay of Cert...
Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5719.11 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three-Month Stay of Certain Requirements')



Your message couldn't be delivered to multiple recipients.

The recipients weren't found at epamail.epa.gov.

dravis.samantha	**Office 365**	**Recipients**
Action Required	Recipients	

Unknown To address

Couldn't deliver to the following recipients:
Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- **Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "To send this message again, click here." Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click Send.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: Fix email delivery issues for error code 5.1.10 in Office 365, and then send the message again. Retype the entire recipient address before selecting Send.

If the problem continues, forward this message to your email admin. If

you're an email admin, refer to the More Info for Email Admins section below.

Was this helpful? *Send feedback to Microsoft.*

More Info for Email Admins

Status code: 550 5.1.10

This error occurs because the sender sent a message to an email address hosted by Office 365 but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Recipient has a valid license - Make sure the recipient has an Office 365 license assigned to them. The recipient's email admin can use the Office 365 admin center to assign a license (Users > Active Users > select the recipient > Assigned License > Edit).

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see Fix email delivery issues for error code 5.1.10 in Office 365.

Original Message Details

Created Date:	**9/21/2017 8:31:29 PM**
Sender Address:	**dravis.samantha@epa.gov**
Recipient Address:	**Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov**
Subject:	**Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5719.11 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three-Month Stay of Certain Requirements')**

Error Details

Reported error:	***550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient not found by SMTP address lookup***
DSN generated by:	**MWHPR09MB1280.namprd09.prod.outlook.com**

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELAY TIME
1	9/21/2017 8:31:30 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1469.namprd09.prod.outlook.com	mapi	1 sec
2	9/21/2017 8:31:30 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1280.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256	*

Original Message Headers

```
Authentication-Results: epa.gov; dkim=none (message not signed)
 header.d=none;epa.gov; dmarc=none action=none header.from=epa.gov;
Received: from MWHPR09MB1469.namprd09.prod.outlook.com (10.173.50.19) by
 MWHPR09MB1280.namprd09.prod.outlook.com (10.172.50.22) with Microsoft SMTP
 Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384_P256) id
 15.20.77.7; Thu, 21 Sep 2017 20:31:30 +0000
Received: from MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) by
 MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) with mapi id
 15.20.0077.011; Thu, 21 Sep 2017 20:31:30 +0000
Content-Type: application/ms-tnef; name="winmail.dat"
Content-Transfer-Encoding: binary
From: "Dravis, Samantha" <dravis.samantha@epa.gov>
To: "Rees, Sarah" <rees.sarah@epa.gov>
CC: Samantha Dravis <Dravis.Samantha@epamail.epa.gov>, Brittany Bolen
          <Bolen.Brittany@epamail.epa.gov>, "Kenny, Shannon"
<Kenny.Shannon@epa.gov>,
          "Kime, Robin" <Kime.Robin@epa.gov>, "Pritchard, Eileen"
          <Pritchard.Eileen@epa.gov>, "Nickerson, William"
<Nickerson.William@epa.gov>,
          "Corrales, Mark" <Corrales.Mark@epa.gov>, "Curry, Bridgid"
          <Curry.Bridgid@epa.gov>, "Owens, Nicole" <Owens.Nicole@epa.gov>,
"Gilbreath,
 Jan" <Gilbreath.Jan@epa.gov>, "Brown, Stephanie N."
          <Brown.StephanieN@epa.gov>
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 5719.11 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas
 Sector: Emission Standards for New, Reconstructed, and Modified Sources:
 Three-Month Stay of Certain Requirements')
Thread-Topic: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 5719.11 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas
 Sector: Emission Standards for New, Reconstructed, and Modified Sources:
 Three-Month Stay of Certain Requirements')
Thread-Index: AQHTMxPwHRDbXEy3BE6+J+TmBkvF+KK/yw7o
Date: Thu, 21 Sep 2017 20:31:29 +0000
Message-ID: <B246FE1B-D086-42E6-A10D-2264A596BFCB@epa.gov>
References: <OF08C5C3BE.BCE0F86B-ON852581A2.006DAC76-
852581A2.006DAE8B@epamail.epa.gov>
In-Reply-To: <OF08C5C3BE.BCE0F86B-ON852581A2.006DAC76-
852581A2.006DAE8B@epamail.epa.gov>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator: <B246FE1B-D086-42E6-A10D-2264A596BFCB@epa.gov>
MIME-Version: 1.0
```

X-Originating-IP: [2600:1003:b01f:7d02:f90c:1dd5:ac36:4a5d]
X-MS-PublicTrafficType: Email
X-Microsoft-Exchange-Diagnostics:
1;MWHPR09MB1469;35:7Yl771/Hc3ufpjWginkx/8YSuNhmUC3TvwoNlCRqDwEB01e82Kx4Ehmv9uuIhuU9CQ6YtV6
X-MS-Exchange-Antispam-SRFA-Diagnostics: SSOS;SSOR;
X-Forefront-Antispam-Report:
	SFV:SKI;SCL:-1;SFV:SKI;SFS:;DIR:INB;SFP:;SCL:-
1;SRVR:MWHPR09MB1280;H:MWHPR09MB1469.namprd09.prod.outlook.com;FPR:;SPF:None;LANG:en;
Return-Path: dravis.samantha@epa.gov
X-MS-Office365-Filtering-Correlation-Id: 88c30163-dc39-46ae-1866-08d5012fbdad
X-Microsoft-Antispam:
	UriScan:;BCL:0;PCL:0;RULEID:(300000500095)(300135000095)(300000501095)(300135300
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1280;3:btbc0wym9vwPIPIr5wBbAN1en0EQth2oAtf6oqPTsrBSgb9pnH5xH4Xi53PXc2
X-MS-TrafficTypeDiagnostic: MWHPR09MB1280:
X-Exchange-Antispam-Report-Test: UriScan:(229425074694992);
X-Exchange-Antispam-Report-CFA-Test:
	BCL:0;PCL:0;RULEID:(100000700101)(100105000095)(100000701101)(100105300095)(1000
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1280;4:BxmGUuuiq2xMefJo4SoL/6l/5fZxzmmg52ealVAHeF0Eh76bamykV6ZZYuN3Lb
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1280;5:w0GgQmooyYec5AwkRXLKAZ6wUQfrLI0pe/OdhMBAcWqa26BoI6PGeZxFVBji32
SpamDiagnosticOutput: 1:0
X-MS-Exchange-CrossTenant-OriginalArrivalTime: 21 Sep 2017 20:31:29.9340
 (UTC)
X-MS-Exchange-CrossTenant-FromEntityHeader: Hosted
X-MS-Exchange-CrossTenant-Id: 88b378b3-6748-4867-acf9-76aacbeca6a7
X-MS-Exchange-Transport-CrossTenantHeadersStamped: MWHPR09MB1280

To: Rees, Sarah[rees.sarah@epa.gov]
Cc: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; Owens, Nicole[Owens.Nicole@epa.gov]; Gilbreath, Jan[Gilbreath.Jan@epa.gov]; Brown, Stephanie N.[Brown.StephanieN@epa.gov]
From: Dravis, Samantha
Sent: Thur 9/21/2017 8:31:29 PM
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5719.11 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three-Month Stay of Certain Requirements')

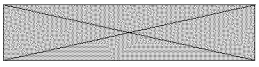
Approved

Sent from my iPhone

On Sep 21, 2017, at 3:58 PM, Sarah Rees <Rees.Sarah@epamail.epa.gov> wrote:

> Approval for OMB Transmittal: NODA - 'Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three-Month Stay of Certain Requirements'
>
> This Policy Review is ready for OP Associate Administrator Approval.
>
> Link to Policy Review Document-> <doclink.gif>

To: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]
From: Microsoft Outlook
Sent: Thur 9/21/2017 8:31:21 PM
Subject: Undeliverable: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5719.10 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirem...
Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5719.10 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements')



Your message couldn't be delivered to multiple recipients.

The recipients weren't found at epamail.epa.gov.

dravis.samantha	**Office 365**	**Recipients**
Action Required	Recipients	

Unknown To address

Couldn't deliver to the following recipients:
Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- **Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "To send this message again, click here." Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click Send.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: Fix email delivery issues for error code 5.1.10 in Office 365, and then send the message again. Retype the entire recipient address before selecting Send.

If the problem continues, forward this message to your email admin. If

you're an email admin, refer to the More Info for Email Admins section below.

Was this helpful? *Send feedback to Microsoft.*

More Info for Email Admins

Status code: 550 5.1.10

This error occurs because the sender sent a message to an email address hosted by Office 365 but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Recipient has a valid license - Make sure the recipient has an Office 365 license assigned to them. The recipient's email admin can use the Office 365 admin center to assign a license (Users > Active Users > select the recipient > Assigned License > Edit).

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see Fix email delivery issues for error code 5.1.10 in Office 365.

Original Message Details

Created Date:	**9/21/2017 8:31:19 PM**
Sender Address:	**dravis.samantha@epa.gov**
Recipient Address:	**Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov**
Subject:	**Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5719.10 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements')**

Error Details

Reported error:	***550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient not found by SMTP address lookup***
DSN generated by:	**MWHPR09MB1280.namprd09.prod.outlook.com**

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELAY TIME
1	9/21/2017 8:31:20 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1469.namprd09.prod.outlook.com	Mapi	1 sec
2	9/21/2017 8:31:21 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1280.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_25	1 sec

Original Message Headers

```
Authentication-Results: epa.gov; dkim=none (message not signed)
 header.d=none;epa.gov; dmarc=none action=none header.from=epa.gov;
Received: from MWHPR09MB1469.namprd09.prod.outlook.com (10.173.50.19) by
 MWHPR09MB1280.namprd09.prod.outlook.com (10.172.50.22) with Microsoft SMTP
 Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384_P256) id
 15.20.77.7; Thu, 21 Sep 2017 20:31:21 +0000
Received: from MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) by
 MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) with mapi id
 15.20.0077.011; Thu, 21 Sep 2017 20:31:20 +0000
Content-Type: application/ms-tnef; name="winmail.dat"
Content-Transfer-Encoding: binary
From: "Dravis, Samantha" <dravis.samantha@epa.gov>
To: "Rees, Sarah" <rees.sarah@epa.gov>
CC: Samantha Dravis <Dravis.Samantha@epamail.epa.gov>, Brittany Bolen
          <Bolen.Brittany@epamail.epa.gov>, "Kenny, Shannon"
<Kenny.Shannon@epa.gov>,
          "Kime, Robin" <Kime.Robin@epa.gov>, "Pritchard, Eileen"
          <Pritchard.Eileen@epa.gov>, "Nickerson, William"
<Nickerson.William@epa.gov>,
          "Corrales, Mark" <Corrales.Mark@epa.gov>, "Curry, Bridgid"
          <Curry.Bridgid@epa.gov>, "Owens, Nicole" <Owens.Nicole@epa.gov>,
"Gilbreath,
 Jan" <Gilbreath.Jan@epa.gov>, "Brown, Stephanie N."
          <Brown.StephanieN@epa.gov>
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 5719.10 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas
 Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay
 of Certain Requirements')
Thread-Topic: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 5719.10 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas
 Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay
 of Certain Requirements')
Thread-Index: AQHTMxP/dE8uTmV0uEyco19zXWeOfqK/ywIN
Date: Thu, 21 Sep 2017 20:31:19 +0000
Message-ID: <0F0673C9-ED3D-4D48-B22A-5266416E1E20@epa.gov>
References: <OF2AB8606A.05A4EB6E-ON852581A2.006DB777-
852581A2.006DB971@epamail.epa.gov>
In-Reply-To: <OF2AB8606A.05A4EB6E-ON852581A2.006DB777-
852581A2.006DB971@epamail.epa.gov>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator: <0F0673C9-ED3D-4D48-B22A-5266416E1E20@epa.gov>
MIME-Version: 1.0
```

X-Originating-IP: [2600:1003:b01f:7d02:f90c:1dd5:ac36:4a5d]
X-MS-PublicTrafficType: Email
X-Microsoft-Exchange-Diagnostics:
1;MWHPR09MB1469;35:HkP4fhdOJDX2ukKW5LsGZUD/axGDfBLp6wDV+yDAL9QA5czxN2ccwvXBr1nCJKwFVjiOCIN
X-MS-Exchange-Antispam-SRFA-Diagnostics: SSOS;SSOR;
X-Forefront-Antispam-Report:
	SFV:SKI;SCL:-1;SFV:SKI;SFS:;DIR:INB;SFP:;SCL:-
1;SRVR:MWHPR09MB1280;H:MWHPR09MB1469.namprd09.prod.outlook.com;FPR:;SPF:None;LANG:en;
Return-Path: dravis.samantha@epa.gov
X-MS-Office365-Filtering-Correlation-Id: 52442272-a008-4f7a-55fb-08d5012fb7be
X-Microsoft-Antispam:
	UriScan:;BCL:0;PCL:0;RULEID:(300000500095)(300135000095)(300000501095)(300135300
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1280;3:zulO9EXzMjIenhJcf0513iYAzE+E4v5qk9SfAj86YhxW1J8ahMS5/+dRWtJMYY
X-MS-TrafficTypeDiagnostic: MWHPR09MB1280:
X-Exchange-Antispam-Report-Test: UriScan:(229425074694992);
X-Exchange-Antispam-Report-CFA-Test:
	BCL:0;PCL:0;RULEID:(100000700101)(100105000095)(100000701101)(100105300095)(1000
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1280;4:1WZhTpubMfTT+O+KsyOQo3uv8gqHu+gXMH4ODV7IJZsgLqqd2j2EqOcGh3XwpoX
X-Microsoft-Exchange-Diagnostics:
	1;MWHPR09MB1280;5:TupXLwSxLlvLPordhPbdeo5dL/UkHnnWNsUkpOIrtFvYJFdazSd14ZMb57+umf
SpamDiagnosticOutput: 1:0
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 (UTC)
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X-MS-Exchange-CrossTenant-Id: 88b378b3-6748-4867-acf9-76aacbeca6a7
X-MS-Exchange-Transport-CrossTenantHeadersStamped: MWHPR09MB1280

To: Rees, Sarah[rees.sarah@epa.gov]
Cc: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; Owens, Nicole[Owens.Nicole@epa.gov]; Gilbreath, Jan[Gilbreath.Jan@epa.gov]; Brown, Stephanie N.[Brown.StephanieN@epa.gov]
From: Dravis, Samantha
Sent: Thur 9/21/2017 8:31:19 PM
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5719.10 - NODA / OMB Review / Review #1 / OAR - 'Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements')

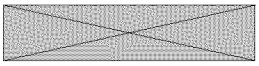
Approved

Sent from my iPhone

On Sep 21, 2017, at 3:58 PM, Sarah Rees <Rees.Sarah@epamail.epa.gov> wrote:

> Approval for OMB Transmittal: NODA - 'Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements'
>
> This Policy Review is ready for OP Associate Administrator Approval.
>
> Link to Policy Review Document-> <doclink.gif>

To: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]
From: Microsoft Outlook
Sent: Thur 11/2/2017 9:47:16 PM
Subject: Undeliverable: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6402 - NPRM / Administrator's Signature / Review #1 / OW - 'Idaho UIC Class II Well Program - Voluntary Primacy Withdrawal')
Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6402 - NPRM / Administrator's Signature / Review #1 / OW - 'Idaho UIC Class II Well Program - Voluntary Primacy Withdrawal')



Your message couldn't be delivered to multiple recipients.

The recipients weren't found at epamail.epa.gov.

dravis.samantha	**Office 365**	**Recipients**
Action Required	Recipients	

Unknown To address

Couldn't deliver to the following recipients:
Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- **Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "To send this message again, click here." Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click Send.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: Fix email delivery issues for error code 5.1.10 in Office 365, and then send the message again. Retype the entire recipient address before selecting Send.

If the problem continues, forward this message to your email admin. If you're an email admin, refer to the More Info for Email Admins section

below.

Was this helpful? *Send feedback to Microsoft.*

More Info for Email Admins

Status code: 550 5.1.10

This error occurs because the sender sent a message to an email address hosted by Office 365 but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Recipient has a valid license - Make sure the recipient has an Office 365 license assigned to them. The recipient's email admin can use the Office 365 admin center to assign a license (Users > Active Users > select the recipient > Assigned License > Edit).

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see Fix email delivery issues for error code 5.1.10 in Office 365.

Original Message Details

Created Date:	**11/2/2017 9:47:14 PM**
Sender Address:	**dravis.samantha@epa.gov**
Recipient Address:	**Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov**
Subject:	**Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6402 - NPRM / Administrator's Signature / Review #1 / OW - 'Idaho UIC Class II Well Program - Voluntary Primacy Withdrawal')**

Error Details

Reported error:	***550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient Dravis.Samantha@epamail.epa.gov not found by SMTP***

	address lookup
DSN generated by:	**MWHPR09MB1197.namprd09.prod.outlook.com**

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELAY TIME
1	11/2/2017 9:47:14 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1469.namprd09.prod.outlook.com	mapi	*
2	11/2/2017 9:47:15 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1197.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_25	1 sec

Original Message Headers

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Authentication-Results: epa.gov; dkim=none (message not signed)
 header.d=none;epa.gov; dmarc=none action=none header.from=epa.gov;
Received: from MWHPR09MB1469.namprd09.prod.outlook.com (10.173.50.19) by
 MWHPR09MB1197.namprd09.prod.outlook.com (10.172.49.143) with Microsoft SMTP
 Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384_P256) id
 15.20.197.13; Thu, 2 Nov 2017 21:47:15 +0000
Received: from MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) by
 MWHPR09MB1469.namprd09.prod.outlook.com ([10.173.50.19]) with mapi id
 15.20.0197.013; Thu, 2 Nov 2017 21:47:14 +0000
Content-Type: application/ms-tnef; name="winmail.dat"
Content-Transfer-Encoding: binary
From: "Dravis, Samantha" <dravis.samantha@epa.gov>
To: "Owens, Nicole" <Owens.Nicole@epa.gov>
CC: Samantha Dravis <Dravis.Samantha@epamail.epa.gov>, Brittany Bolen
          <Bolen.Brittany@epamail.epa.gov>, "Kenny, Shannon"
<Kenny.Shannon@epa.gov>,
          "Kime, Robin" <Kime.Robin@epa.gov>, "Pritchard, Eileen"
          <Pritchard.Eileen@epa.gov>, "Nickerson, William"
<Nickerson.William@epa.gov>,
          "Corrales, Mark" <Corrales.Mark@epa.gov>, "Curry, Bridgid"
          <Curry.Bridgid@epa.gov>, "Schillo, Bruce" <Schillo.Bruce@epa.gov>,
"Adams,
 Darryl" <Adams.Darryl@epa.gov>
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 6402 - NPRM / Administrator's Signature / Review #1 / OW - 'Idaho UIC
 Class II Well Program - Voluntary Primacy Withdrawal')
Thread-Topic: OP Policy Review - ORPM Office Director Approval Notification
 (SAN 6402 - NPRM / Administrator's Signature / Review #1 / OW - 'Idaho UIC
 Class II Well Program - Voluntary Primacy Withdrawal')
Thread-Index: AQHTVCAzFKCJ5BLQKki+3P9w7iQ6FqMBoApD
Date: Thu, 2 Nov 2017 21:47:14 +0000
Message-ID: <E290E56F-AFB2-4329-B12B-175A0CBEBC24@epa.gov>
References: <OF6D8C1403.23F92F63-ON852581CC.0075160B-
852581CC.00751703@epamail.epa.gov>
In-Reply-To: <OF6D8C1403.23F92F63-ON852581CC.0075160B-
852581CC.00751703@epamail.epa.gov>
Accept-Language: en-US
Content-Language: en-US
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator: <E290E56F-AFB2-4329-B12B-175A0CBEBC24@epa.gov>
MIME-Version: 1.0
X-Originating-IP: [2600:1003:b025:4f7c:60df:fd6a:46fa:3f37]
X-MS-PublicTrafficType: Email
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1;SRVR:MWHPR09MB1197;H:MWHPR09MB1469.namprd09.prod.outlook.com;FPR:;SPF:None;LANG:en;
Return-Path: dravis.samantha@epa.gov
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08d5223b47d6
X-MS-Exchange-Transport-CrossTenantHeadersStamped: MWHPR09MB1197

To: Owens, Nicole[Owens.Nicole@epa.gov]
Cc: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; Schillo, Bruce[Schillo.Bruce@epa.gov]; Adams, Darryl[Adams.Darryl@epa.gov]
From: Dravis, Samantha
Sent: Thur 11/2/2017 9:47:14 PM
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6402 - NPRM / Administrator's Signature / Review #1 / OW - 'Idaho UIC Class II Well Program - Voluntary Primacy Withdrawal')

Approved

Sent from my iPhone

On Nov 2, 2017, at 5:19 PM, Nicole Owens <Owens.Nicole@epamail.epa.gov> wrote:

> Approval for Administrator's Signature: NPRM - 'Idaho UIC Class II Well Program - Voluntary Primacy Withdrawal'
>
> This Policy Review is ready for OP Associate Administrator Approval.
>
> Link to Policy Review Document-> <doclink.gif>

From: Dominguez, Alexander
Location: 1200 Pennsylvania Avenue, NW (North) - Room 1332 WJCN
Importance: Normal
Subject: Small Refineries (re: RFS hardship exemption)
Start Date/Time: Tue 8/15/2017 2:00:00 PM
End Date/Time: Tue 8/15/2017 3:00:00 PM
houseFY18e&wreportlanguage.pdf

Location: 1200 Pennsylvania Avenue, NW (North) - Room 1332 WJCN

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.

EPA Contact: For an escort from Security to the meeting call 202-564-1016 or 202-578-5985

Request:

A coalition of small refineries would like to discuss the RFS hardship exemption.

Attendees:

To follow

Contact:

Susan Butler

Capitol Resources LLC

915 Prince Street

Alexandria, VA 22314

(703)739-5860 (office)

(703)298-2826 (cell)

To: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]; Dravis, Samantha[dravis.samantha@epa.gov]
Cc: Patrick Kelly[kellyp@api.org]
From: Will Hupman
Sent: Tue 4/25/2017 6:43:46 PM
Subject: Thank You
2017 RFS API Comments EPA-HQ-OAR-2016-0004.pdf
A_Preliminary_Assessment_of_RIN_Market_Dynamics,_RIN_Prices,_and_Their_E....pdf

Mandy & Samantha – Thank you so much for taking the time to meet with our group this afternoon on the 2018 RVOs and the Point of Obligation issue. I wanted circle back on a few specific items that you requested from the meeting. If there's any additional information or materials that we can provide (or questions to answer), I hope you'll let me know. Thanks again, Will

1) Waiver Authority (*see first attachment, "2017 RFS API…"*) – As mentioned, our comments include discussion of the waiver authorities at your disposal. Specifically, on pages 3 & 4, our comments reference the justification of your waiver based on inadequate domestic supply as well as the encouragement of waiver usage based on severe economic harm.

2) RIN Prices and the Marketplace – (*see second attachment and link below*) – The second attachment, "*A Preliminary Assessment…"* is from EPA's Dallas Burkholder in May 2015 and discusses the impact of RIN prices on retail fuel prices and related factors. On page 3, Burkholder states: *"The higher market prices for petroleum fuels with RIN obligations relative to those without RIN obligations suggest that obligated parties are generally recovering their RIN costs in the price of the petroleum fuels they produce. Merchant refiners, who largely purchase separated RINs to meet their RFS obligations, should not therefore be disadvantaged by higher RIN prices, as they are recovering these costs in the sale price of their products."* On pages 28 – 30, he explores in more detail the RIN Price Impacts on Merchant and Integrated Refiners.

Linked here: http://web.mit.edu/knittel/www/papers/RIN_latest.pdf is a July 2015 study with

analytical data from professors at MIT, Univ. of Michigan, and Harvard entitled "The Pass-Through of RIN Prices to Wholesale and Retail Fuels under the Renewable Fuel Standard."

On page 19, the authors conclude that "*Taken together, these results support the view that RIN prices are passed through quickly, but not immediately, into the wholesale prices of obligated fuels*."

Will Hupman

Director – Federal Relations | American Petroleum Institute

desk: 202-682-8396 | cell: 202-615-7192 | hupmanw@api.org

Table of Contents

I. The EPA has Clear Authority to Adjust EISA's Volumes Using the Cellulosic and General Waiver Provisions

II. Total Renewable Volume for 2017

- A. Conventional Renewable Volume
  - 1. Significant E0 Demand
  - 2. Limited E85 Demand
    - a) E85 Sales From Existing Infrastructure
    - b) Consumer Behavior
    - c) State Incentive Programs Have not Worked
    - d) Fuel Infrastructure Constraints and Flexible Fuel Vehicles
      - (1) High E85 Retail Infrastructure Costs
      - (2) Small Business Impacts
      - (3) Flexible Fuel Vehicles (FFVs)
  - 3. E15 Issues
    - a) E15 Incompatibility with Existing Vehicle Fleet
    - b) E15 Incompatibility with Existing Fuel Retail Infrastructure
    - c) Liability Concerns
  - 4. Conventional Renewable Imports
- B. Advanced Biofuels Volume
- C. Cellulosic Biofuels Volume and Concerns with EPA's Methodologies
  - 1. Estimated Liquid Cellulosic Biofuel Production
  - 2. Individual Facility Production Range
  - 3. 25th Percentile Model For Forecasting Production By "New" Facilities
  - 4. 50th Percentile Model For Forecasting Production By "Established" Facilities
  - 5. Additional Issues
  - 6. CNG/LNG Cellulosic Biofuel Production Estimate
- D. Total Renewable Volume

III. Biomass-Based Diesel (BBD) Standard For 2018

- A. Lead Time Requirement
- B. Six Factor Analyses
- C. Cost Impacts of Proposed Standards
- D. Implications of BBD Requirements within the Advanced Standards
- E. Feedstock Availability
- F. Vehicle Constraints and Consumer Preference

IV. Point of RFS Obligation

V. Cellulosic Waiver Credits

VI. E15 RVP waiver

VII. E15 Labeling

VIII. RIN Carryover

I. The EPA has Clear Authority to Adjust EISA's Volumes Using the Cellulosic and General Waiver Provisions

EPA correctly observes that the Proposed Rule comes at a time when "the market transitions from mild resistance to obstacles that are more difficult to overcome, particularly with regard to infrastructure and relative pricing for higher ethanol blends such as E15 and E85." [1] EPA also recognizes that there are various "constraints associated with supplying renewable fuels to the vehicles and engines that can use them." [2] EPA correctly concludes that these constraints and obstacles prevent the Agency from imposing the renewable fuel volumes requirements in CAA section 211(o)(2)(B) and justify the use of EPA's waiver authorities to provide a measure of relief from those requirements. EPA must establish RFS volumetric standards based on available projections of the use of transportation fuel and the corresponding ability of the fuels market to utilize renewable fuel. It must also consider the infeasibility of blending ethanol into gasoline at levels above 10 percent by volume given that most vehicles on the road today cannot burn blends with higher volumetric percentages of ethanol. "Ethanol faces demand, distribution system, and regulatory challenges that make it difficult to increase its use as a motor fuel regardless of its source."[3] The documented overall decline in gasoline consumption in the United States, particularly since the enactment of EISA, has exacerbated the problems presented by the E10 blendwall, making an exercise of EPA's waiver authority both appropriate and necessary. API provides a detailed discussion on the legal authority supporting EPA's exercise of its waiver authorities in the context of the Proposed Rule in Appendix A, *infra.*

A. EPA's Waiver Based on Its Cellulosic Waiver Authority Is Fully Justified and Permissible.

In its Proposed Rule, EPA properly notes that CAA section 211(o)(7)(D) "provides that if the projected volume of cellulosic biofuel production is less than the minimum applicable volume in the statute, EPA shall reduce the applicable volume of cellulosic biofuel required to the projected volume available."[4] Next, EPA appropriately recognized that CAA section 2011(o)(7)(D) "also provides EPA with the authority to reduce the applicable volume of total renewable fuel and advanced biofuel in years where it reduces the applicable volume of cellulosic biofuel." The D.C. Circuit has confirmed EPA's broad discretion to reduce the statutory volumes using this waiver authority: "In the absence of any express or implied statutory directive to consider particular factors, EPA reasonably concluded that it enjoys broad discretion regarding whether and in what circumstances to reduce the advanced biofuel and total renewable fuel volumes under the cellulosic biofuel waiver provision." *Monroe v. EPA* , 750 F.3d 909, 915 (D.C. Cir. 2014).

The volume of cellulosic renewable fuel listed in EISA for 2017 is 5.5 billion gallons. Based on what it believes will be produced, EPA proposes a cellulosic volume of 312 million gallons for

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[1] NPRM at 34790.
[2] NPRM at 34784.
[3] Statement of Howard Gruenspecht Deputy Administrator Energy Information Administration U.S. Department of Energy Before the Committee on Energy and Commerce Subcommittee on Energy and Power United States House of Representatives. June 22, 2016.
[4] NPRM at 34785.

2017. Thus, EPA is adjusting the cellulosic mandate listed in EISA by 5.188 billion gallons and can reduce the advanced and general renewable statutory volumes by up to 5.188 billion gallons each using the cellulosic waiver authority.[5] EPA has proposed to use this broad discretionary cellulosic waiver authority to reduce the statutory volume for advanced biofuel by 5.0 billion gallons. Similarly, EPA proposes to reduce the total renewable fuel mandate by an initial increment of 5.0 billion gallons for 2017 using the cellulosic waiver authority.[6]

As discussed in the section below, EPA also proposes to use its general waiver authority to reduce further the applicable volume of total renewable fuel by an additional 0.2 billion gallons in 2017.[7] We note that EPA actually needs to rely only on its general waiver authority to waive 12 million gallons of the general renewable volumes, as EPA is proposing to reduce the cellulosic volumes by 5.188 billion gallons, and can therefore use the cellulosic waiver authority to waive up to 5.188 billion gallons of the general renewable volume. We do not believe the statute limits EPA's authority to reduce the general renewable category to the full extent that the cellulosic category is reduced even if EPA does not reduce the advanced category to the same extent. EPA should, therefore, rely on its broad cellulosic waiver authority to the greatest extent possible. The general renewable fuel producers are essentially arguing that general renewable fuels should backfill the cellulosic space even though cellulosic renewable fuels would have provided a 60% GHG reduction and most general renewable fuels do not guarantee any GHG reduction at all due to EISA's grandfathering clause for general renewable fuels.

B. EPA's Waiver Based on Inadequate Domestic Supply Is Fully Justified and Permissible.

The Clean Air Act grants EPA two types of general waiver authorities with respect to the RFS program: EPA is authorized to waive statutory RFS requirements based on a determination that (1) "implementation of the requirement would severely harm the economy or environment of a State, a region, or the United States,"[8] or "there is an inadequate domestic supply."[9] The NPRM proposes to grant a general waiver for 0.2 billion gallons of total renewable fuel in 2017. EPA's grant of waivers based on a determination that there is an inadequate domestic supply is a permissible interpretation of the statute, and fully within EPA's authority.

C. EPA's Waiver Should Also Be Based On the Grounds That the Statutory Volumes Would Severely Harm the Economy.

EPA should also base its waivers on a determination that requiring compliance with the full statutory volumes would cause severe harm to the economy. Although the statute does not require EPA to waive the statutory renewable fuel requirements on both grounds, it is well settled that a regulation is arbitrary and capricious if it "entirely fail[s] to consider an important

---

[5] As discussed in more depth below, EPA should set the cellulosic mandate at no more than 200 million gallons for 2017 and can therefore reduce the advanced and general renewable categories by 5.3 billion gallons solely using the cellulosic waiver authority.
[6] NPRM at 34786.
[7] *Id.*
[8] 42 U.S.C. § 7545(o)(7)(A)(i).
[9] *Id.* § 7545(o)(7)(A)(ii).

aspect of the problem." [10] Whether RFS mandates will result in severe harm to the economy undoubtedly is an important aspect of the problem. Accordingly, EPA should consider *both* statutory grounds for granting a general waiver, and should determine that both support a general waiver for 2017.

In its comments on EPA's Proposed Rule for 2014-2016, API submitted extensive evidence, including a major economic study by NERA, that a general waiver is needed to avoid severe harm to the national economy.[11]

In its response to comments document regarding the 2014-2016 RFS, EPA asserted that "it is unnecessary to evaluate concerns that implementation of the statutory applicable volumes would cause severe economic harm, since EPA is exercising its waiver authorities on other grounds to substantially reduce the statutory volumes."[12]

API respectfully disagrees. Whether or not to exercise its waiver authority on the additional ground that lack of a general waiver will cause severe economic harm is an "important aspect of the problem" that EPA should consider.

Accordingly, API is resubmitting the 2015 NERA study as Appendix E, which was in turn an updated version of a 2012 NERA study API submitted in connection with EPA's initial 2014 proposed RFS rule.[13]

EPA is not free to ignore this evidence on a critical issue.[14]

II. Total Renewable Fuel Volume for 2017

EPA's methodology for setting volume requirements when its waiver authority has been exercised should be consistent and transparent for stakeholders. The statutory volumes are unattainable due in part to the limitations on the volume of ethanol that can be used. It is appropriate for EPA to determine a total ethanol volume, and adjust the standards downward to the extent marketplace realities limit expected ethanol use in 2017.

---

[10] *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

[11] *See* Comments of the Am. Fuel & Petrochem. Mfrs. and the Am. Petroleum Inst., Docket ID Nos. EPA-HQ-OAR-2015-0111, EPA-HQ-OAR-2013-0479 (July 27, 2015).

[12] EPA, *Renewable Fuel Standards for 2014, 2015 and 2016, and the Biomass-Based Volume for 2017: Response to Comments*, at 116 (Nov. 2015) (EPA-420-R-15-024).

[13] A more detailed discussion of the NERA studies and the severe economic harm analysis can be found in Appendix B at 1-4.

[14] *See Delaware Dep't of Natural Res. & Envtl. Control v. EPA*, 785 F.3d 1, 15 (D.C. Cir. 2015) (EPA must respond to "relevant and significant" comments); *Reytblatt v. U.S. Nuclear Regulatory Comm'n*, 105 F.3d 715, 722 (D.C. Cir. 1997) (agencies "must respond in a reasoned manner to [comments] that raise significant problems").

A. Conventional Renewable Volume

Due to the limitations of the blendwall, EPA should set a total et hanol volume of not more than 9.7 percent of gasoline demand. As explained in the sections that follow, this is due to:

A. Significant E0 demand, calculated at 5.3 billion gallons by EIA for 2015 or 3.8% of 2015 gasoline demand
B. Limited E85 demand of less than 100 million gallons according to EIA, equivalent to less than 0.1% of gasoline demand
C. Limited E15 demand

API recommends that the 2017 RFS Standards should not require more than 13.92 billion gallons of ethanol. This volume is based on the assumption t hat the total gasoline pool in 2017 should contain 9.7 volume % ethanol on average, plus an allowance for the small amount of ethanol contained in E85. We believe the volume of E15 in 2017 will be negligible and will not contribute significantly to the to tal volume of ethanol consumed in the market. The calculation of 13.92 billion gallons of ethanol appears in the table below:

Calculate 2017 Ethanol Consumption based on 9.7% blendwall target					
2017 Gasoline Demand		9.81	MMbpd	*from May 2016 STEO*	
		142.72	Bgal/yr		
all volumes in Bgal/yr					
Gasoline Volume	142.72				
Ethanol in gasoline	9.70%	13.84			
E15 Volume	0.00				
Ethanol in E15	15%	0			
E85 Volume	0.10				
Ethanol in E85	74%	0.074			
Total Ethanol Consumption		13.92	Bgal/yr		

The methodology using the 9.7% blendwall target was previously recommended by AFPM and API in comments to the 2014, 2015, and 2016 RFS NPRM. We determined that an average value of 9.7 volume % ethanol is a target that adequately covers the typical volumes of E10 and E0 in the marketplace. The 9.7% target reflects the lowest volume of E0 observed in the marketplace (3% of the to tal gasoline pool) in recent years. Using a 9.7% target is a simple, practical, and consistent method that acknowledges the presence of E0 in the market but does not require a quantification of the annual E0 volume and the corresponding adjustment in the blendwall target. In fact, we believe that the 9.7% target is generous and will usually understate the volume of E0 in the marketplace. This methodology is a reasonable balance between increasing the allowable content of ethanol in the gasoline pool whil e keeping the market away from the edge of the blendwall.

1. Significant E0 Demand

E0 is demanded by boaters, small equipment and non -road users, motorcyclists, and by vehicle owners. EPA should treat these consumer groups equally in setting standards that allow them access to the E0 they demand. While EPA acknowledges that E0 demand constrains the volume of ethanol that can be supplied to the market, [15] the agency only quantifies recreational marine use of E0 and does not recognize other legitimate consumer demands for this fuel. In fact, EPA dismisses these other demands in stating tha t the RFS program is increasing renewable fuel supply by incentivizing the transition from E0 to E10 and higher ethanol blends. In reality, there is ample incentive to supply E10, and a final rule that dismisses the real demand for E0 risks triggering the negative economic consequences of the ethanol blendwall. We do not believe Congress intended for the RFS to eliminate the option of E0 for highway use as EPA implies.

EPA needs to account for the significant demand for ethanol free E0 gasoline in sett ing the final 2017 RFS standards. In comments to the proposed 2014 RFS, API and AFPM provided a methodology for determining E0 demand based on available E0 data . The two trade groups also suggested that improved data collection would enhance EPA's abilit y to project demand. EPA dismissed the API/AFPM assessment of E0 demand in setting the final 2014-2016 RFS, noting in the response to comments "we do not believe that recent supply of E0 is on the order of 3% of the gasoline pool." The final 2016 stan dard presumed 124 million gallons of E0 would be supplied in 2016, and EPA did not respond to critiques from API or stakeholders in the boating community to calculation of E0 demand at marinas that was provided in a memo to the docket in that rule covering the 2014 – 2016 RFS standards.

In May 2016 EIA released an estimate of 5.3 billion gallons for total E0 usage in 2015, [16] which was about 3.8% of the 2015 gasoline demand. EIA's assessment demonstrates that EPA's estimate of 200 million gallons of E0 nationwide demand is wrong : it amounts to only 4% of EIA's estimate. It is also less than the E0 demand reported by the Iowa Department of Revenue for Iowa alone. [17] In determining the 2017 RFS standards, EPA should use the same methodology outlined in the referenced May 2016 EIA memo for developing E0 demand estimates.

2. Limited E85 Demand

Stated simply, based on the information provided in th is Proposed Rule and historical data of E85 demand, it is not reasonable to expect any significant increase in E85 sales in 2017 ; the market does not demand E85 fuel . Relying on the mere possibility that demand for E85 might increase in 2017 is a risky approach for obligated parties, consumers and the economy and EPA should not set standards based on this assumption.

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[15] Proposed Rule (page 34790)
[16] Today in Energy, *Almost All U.S. Gasoline is Blended with 10% Ethanol,* May 4, 2016.
[17] "2015 Retailers Fuel Gallons Annual Report," Kathy Harpole, Research and Analysis Division, Iowa Department of Revenue, April 2016

a) E85 Sales from Existing Infrastructure

API has commented extensively on E85 demand in comments submitted in response to the (a) proposed rule for the 2014 Standards for the Renewable Fuel Standard Program published on November 29, 2013 and (b) proposed rule for the 2014, 2015, and 2016 Renewable Fuel Standards and 2017 Biomass-Based Diesel Volume standard published on June 10, 2015.[18]

EPA developed estimates of current and historical volumes of nationwide E85 consumption based on linear regression analyses of E85 sales volumes obtained from five states (MN, CA, IA, NY and ND) as a function of the price of E85 relative to gasoline as determined from data drawn from www.e85prices.com (a website maintained by the Renewable Fuels Association), and normalized by estimates of E85 station counts taken from the DOE Alternative Fuels Data Center. This methodology (and related results) is outlined in a series of EPA memos to the Docket.[19] [20] [21] [22] [23]

As EPA acknowledged in its analysis, the use of data from E85prices.com is fraught with issues. The data: (a) represent voluntary contributions by individuals, (b) are not collected consistently over time, and (c) are not obtained consistently in proportion to the number of retail stations in a given state/geographic area. This contributes to a significant amount of uncertainty in the individual linear least-squares regressions that EPA developed for each of the 5 states included in its analysis, which is made evident by the extremely low R-squared coefficient statistics (which ranged from 0.004 to 0.33 for 4 of the 5 states) that accompany these results. Based on these poor statistical results, the methodology is not sound to be used in rulemaking and should be dismissed by EPA.

Likewise, it is not clear that the five states which supplied the E85 sales volume data used in EPA's analysis collected this information in a similar and consistent manner. For instance, the time periods encompassed in each of the five data sets varied from state to state, and some (e.g., Iowa) were provided on a quarterly (as opposed to monthly) basis. Furthermore, the extent to which incentives provided by some states for E85 usage may have introduced a bias to the data employed in the EPA analysis is unclear.

In short, the disparate nature of the underlying data used by EPA lead us to question the accuracy and validity of the methodology developed by the Agency to estimate nationwide E85 volumes.

EPA states in the preamble to the current Proposed Rule that it has estimated E85 demand for 2014 and 2015 to be 150 million gallons and 166 million gallons, respectively. EPA further

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[18] See EPA-HQ-OAR-2013-0479-5293 and EPA-HQ-OAR-2015-0111-1948

[19] David Korotney, EPA, *Correlating E85 Consumption Volumes with E85 Price*, EPA-HQ-OAR-2015-0111

[20] David Korotney, EPA, *Estimating Achievable Volumes of E85*, EPA-HQ-OAR-2016-004

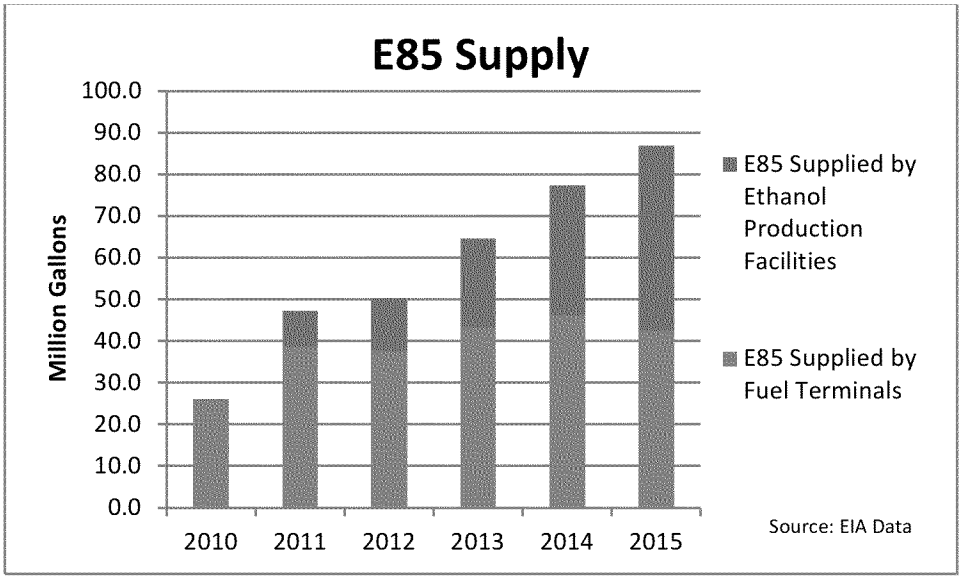
[21] David Korotney, *Preliminary Estimate of E85 Consumption in 2015*, EPA-HQ-OAR-2016-004

[22] David Korotney, *Estimates of the number of retail stations offering E85*, EPA-HQ-OAR-2015-0111

[23] Dallas Burkholder, *Estimating E85 Consumption in 2013 and 2014*, EPA-H-OAR-2016-004

states: *"In deriving the 2016 volume requirements we estimated that E85 volumes would increase to 200 million gallons, though we also said that 400 million gallons was possible under highly favorable though unlikely conditions."* As we have noted in the earlier comments on the 2014, 2015, and 2016 RFS standards, we believe that the approach used by EPA to estimate nationwide E85 consumption leads to a substantial understatement of this volume relative to the statistics provided by EIA.

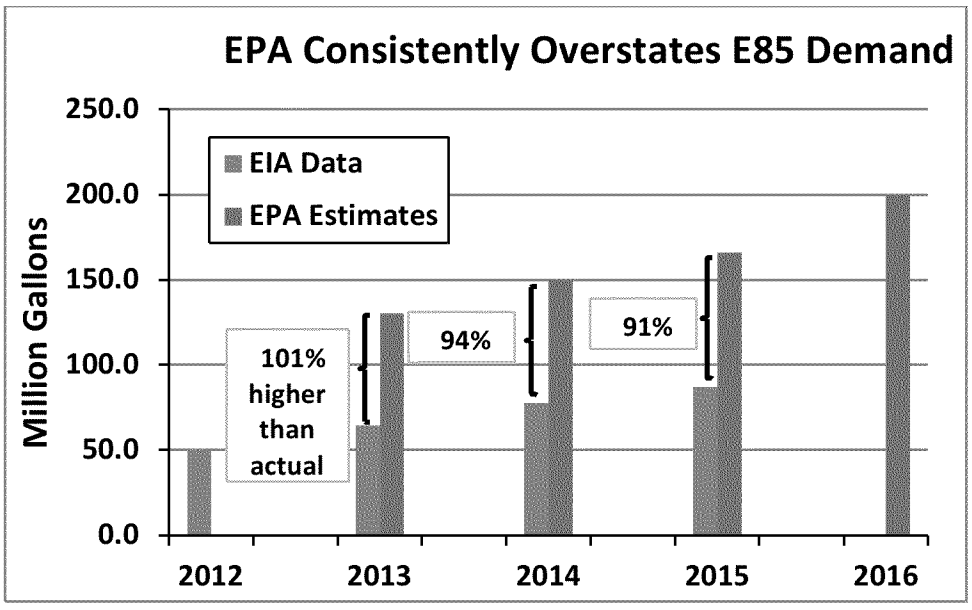
The EIA data table *U.S. Refinery and Blender Production of Motor Gasoline, Finished, Conventional, Greater than Ed55* (ethanol blends above 55%)[24] shows the volume of E85 blends distributed from bulk terminals. And the EIA data table *Renewable Fuels & Oxygenate Plant Net Production*[25] shows E85 distributed directly from ethanol production facilities. These two data series, summed together (as illustrated in the figure below), provide the most reliable estimate of national E85 consumption.



A comparison of EPA estimates of E85 volumes (as reported in the preambles to recent RFS proposed rulemakings) with the EIA data indicates that the Agency has consistently overstated this metric by about 91-101% for the past three years (2013 – 2015). (See the figure below.)

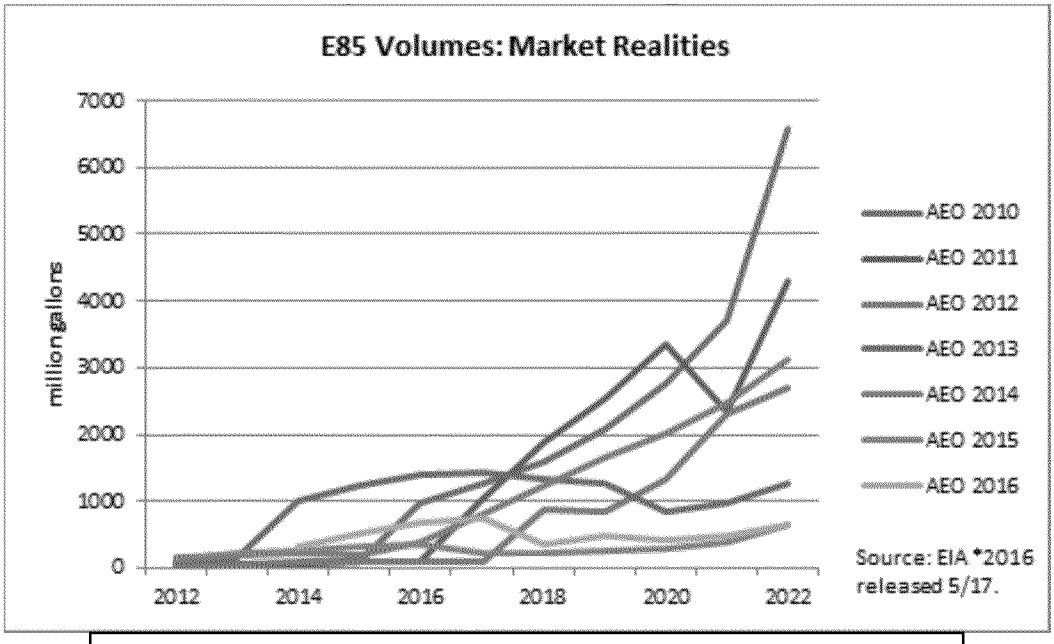
[24] http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=M_EPM0CAG55_YPR_NUS_MBBL&f=A

[25] http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=M_EPM0F_YNP_NUS_MBBL&f=A



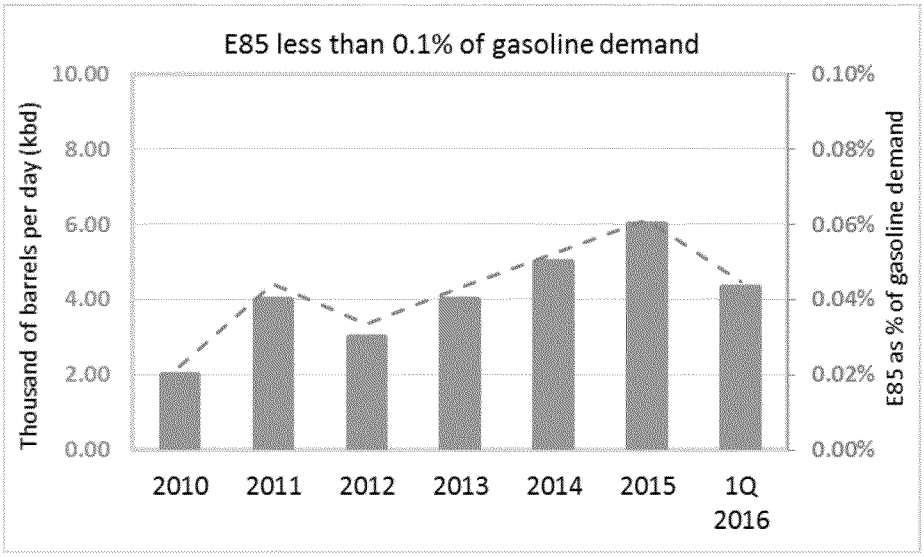
This further underscores our concerns regarding the accuracy of the Agency's E85 methodology and raises questions about the credibility of EPA's projections of E85 demand for 2016 and later years.

EPA is, however, not the only federal agency which has consistently missed the mark in projecting future volumes of E85. As shown in the chart below, previous EIA projections of E85 demand have not materialized (and have, in fact, swung rather wildly in the near term).



Sources: EIA Annual Energy Outlook Reports 2010 - 2016

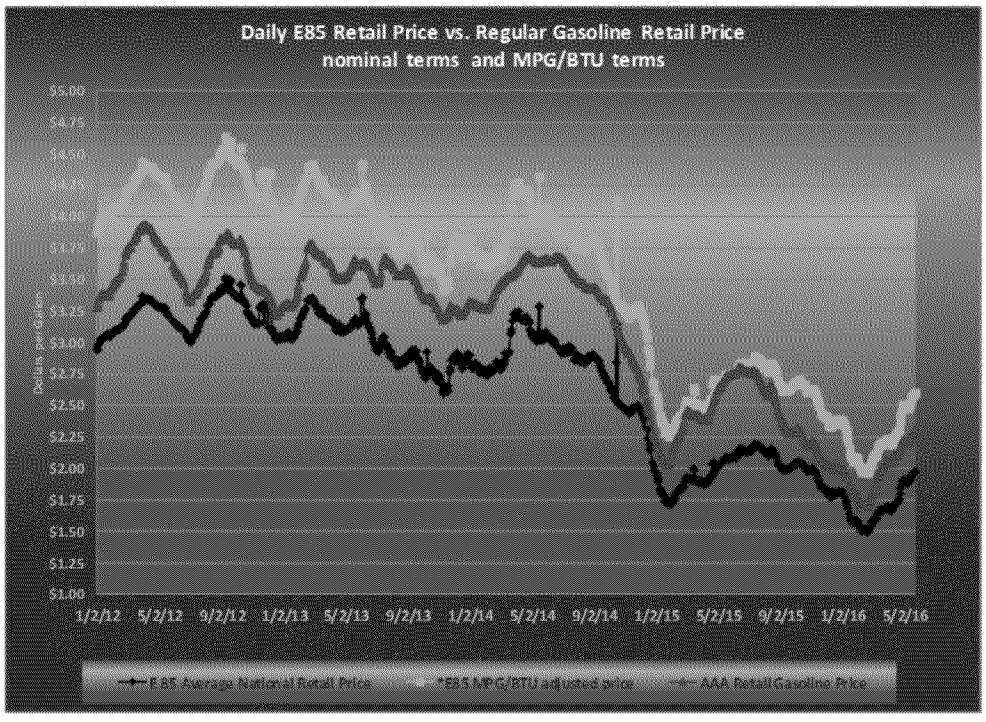
All of the above being said, the nationwide volume of E85 demand currently represents a tiny fraction of total annual motor gasoline consumption (as shown by the chart below). E85 demand has been consistently less than 0.1% of annual gasoline demand according to EIA, and this fraction is not likely to grow significantly in the near term for the reasons which we discuss in the following section.



b) Consumer Behavior

No definitive study shows why customers have not used E85 with greater frequency.[26] Some short term and limited analysis (focused on a limited sample of states) by The Fuels Institute and EPA indicates that consumers would respond to E85 price adjustments that account for the lower E85 energy content (as shown by the graph below). As discussed above, there is no historical evidence to support any significant consumer response to a differential between retail prices of E85 and motor gasoline. E85 volumes remain below one tenth of one percent of total annual gasoline demand. Whether an energy-adjusted differential between E85 and motor gasoline price is indeed an accurate predictor of consumer behavior is therefore uncertain. Testimony provided by a gasoline marketer at EPA's Public Hearing in Kansas City, KS on June 25, 2015 indicated that demand declined despite E85 being priced 25% below E10. This would suggest that consumers may also be considering "convenience cost" in choosing whether to purchase E85. In general, E85 reduces fuel economy and range by about 20-30 percent," according to the May 2010 EPA Technical Highlights paper, "E85 and Flex Fuel Vehicles."[27] If E85 were sold at an energy-equivalent price, operators of FFVs would still be inconvenienced because would have to stop to refuel 30 percent more often than if they used gasoline.

[26] http://www.eia.gov/biofuels/workshop/presentations/2013/pdf/presentation-04-032013.pdf
[27] http://www.epa.gov/oms/renewablefuels/420f10010a.pdf



Source: AAA (gasprices.aaa.com)

c) State Incentive Programs Have not Worked

The proposed rule states that E85 volumes can increase from 200 million gallons per year to nearly 400 million gallons per year [28] citing the Korotney Memorandum to the Docket. [29] The proposal also states that these increases are "possible if the market can overcome constraints associated with E85 pricing at retail and consumer responses to those prices."[30] Yet the Korotney memo also states, "Since reaching 400 million gallons of E85 in 2017 would require a confluence of optimum conditions based on the information currently available, and our efforts to quantify the actions needed require considerable speculation as to how consumer responses to E85 price discounts may be affected by E85 marketing strategies, signage, and consumer education, 400 million gallons of E85 appears to be highly unlikely in 2017."

The rule fails to account for the significant incentives that have been offered to every part of the supply chain for higher ethanol blend fuels. These incentives include significant loans, grants, rebates, tax incentives, and other incentives that have been available to higher level ethanol blended fuels more than a decade without any meaningful increase in the demand for the fuel. As described below, these incentive programs intended to increase the sale of E85 have not proven successful and the incentives from the USDA's Biofuel Infrastructure Partnership (BIP) are only

[28] Proposed rule, page 34787
[29] "Estimating achievable volumes of E85," Korotney, David, U.S. EPA, OTAQ, EPA Air Docket EPA-HQ-OAR-2016-0004
[30] Proposed rule, page 34800

the latest in a long line of programs that to date have not shown any meaningful change in E85 sales.

In 2009 the National Renewable Energy Laboratory completed a study estimating the achievable volumes of E85. [31] That study remains relevant today. It states that,

> *Historically, the U.S. Department of Energy (DOE) Clean Cities Program has been the chief federal catalyst for the deployment of E85 infrastructure. Between 1999 and 2006, Clean Cities provided $11 million in grants to 33 states to install biofuels infrastructure.*
> *…*
> *U.S. state governments collectively offer scores of financial incentives and favorable regulatory policies that promote the use of alternative fuels. These programs include industry recruitment incentives, corporate tax credits, net metering policies, grants, loan programs, rebate programs, personal tax cre dits, sales tax exemptions, property tax exemptions, and production incentives. [emphasis added]*

The report goes on to say:

> *Sixty percent of states are significantly invested in supporting E85 through grants, loans, or tax incentives for E85 infrastructu re… Certain states have provided funding through grant programs to install E85 dispensers, including blender pumps, at refueling stations. [These states include Michigan, Iowa, South Dakota, Illinois, Tennessee, Ohio, and New York].*
> *[The report identifies states that provided tax credits for fueling stations including, South Carolina, Ohio, Idaho, and Michigan].*

A review of the U.S. Department of Energy – Energy Efficiency & Renewable Energy, Alternative Fuels Data Center[32] report on incentives related to ethanol shows that these financial enticements continue to this day and include not only the retail gasoline station but biofuel production facility grants, tax exemptions and loans, state requirements to acquire alternative fuel vehicles (e.g., E85) and significant tax incentives for the retail and bulk price for E85. Iowa uses many of these tools to facilitate the sale of products with greater than 10% ethanol. However, the sale of high -ethanol fuels remains incredibly low. In contrast the sale of fuels without ethanol, in the heart of the Corn Belt, is very high.

PMAA's written testimony, intended to be delivered at the June 9 hearing in Kansas City, provides an example of a failed attempt to sell higher ethanol blend fuels.

> *… [The speaker's] family business also has invested in legal infrastructure for higher blends. At that location where we spent over $100,000 to do so we averaged 58 gallons a day of blends over E10 in 2015. A few years ago, the North Dakota Department of*

[31] "E85 Dispenser Study," K. Moriarty et. al., Technical Report NREL/TP-7A2-47172, December 2009

[32] Example link to "Minnesota Laws and Incentives for Ethanol," http://www.afdc.energy.gov/fuels/laws/ETH/MN

Commerce had a Blender Pump Program. A follow up survey was conducted by the North Dakota Petroleum Marketers Association which found that after the "commitment to offer higher blends" conditions were met, that 64 percent of respondents had discontinued or planned on discontinuing the sale of E85 and other higher blends.

The 2015 Iowa Fuels report published in April 2016 by the Iowa Department of Revenue[33] shows that contrary to the EPA's belief that additional incentives and marketing techniques for E85 will create consumer demand, the consumer actually prefers non-ethanol gasoline. As shown in the Table below, non-ethanol gasoline (E0) sales in Iowa accounted for 14% of the total volume of gasoline and higher level ethanol blends. On the contrary, sales of fuels with greater than 10% ethanol (E15 plus E20 plus E85) accounted for only 1.4% of the volume of gasoline and ethanol/gasoline sales. As shown here, contrary to EPA's estimate of E0 demand of only 200 million gallons for the whole country, the sale of E0 in Iowa alone accounts for 220.4 million gallons.

2015 Iowa Fuel Sales

Fuel	**Sales as percent of total gasoline and ethanol/gasoline sales**	**Volume (Million gallons)**
E0	14%	220.4
E85 and E20*	1%	15.7
E15**	0.4%	6.2
Total ethanol share of fuel sales	9.2%	143.8
Total sales gasoline and ethanol	100%	1,561.7

* E85 = 13.2 million gal. and E20 = 2.5 million gal.
** E15 is defined by the State as E15 and E15 flex (E15 is sold in summer as Ethanol Flex Fuel)

d) E85 Fuel Infrastructure Constraints and Flexible Fuel Vehicles

The E85 infrastructure required to facilitate E85 consumption includes primarily the terminals, the retail stations, and the vehicles. We will focus most of our comments on the retail challenges.

(1) High E85 Retail Infrastructure Costs

The cost of installing E85 retail infrastructure is high. In a letter to Chairman Upton and Ranking Member Pallone, House Committee on Energy and Commerce, the Petroleum Marketers Association of America (PMAA) states, "The problem for underground tank owners is 99 percent of existing equipment currently in the ground is not *legally* certified as compatible

[33] "2015 Retailers Fuel Gallons Annual Report," Kathy Harpole, Research and Analysis Division, Iowa Department of Revenue, April 2016

with ethanol blends higher than 10 percent." [34] In the July 15, 2015 rule on underground storage tanks, EPA discusses existing systems and states:

> *EPA thinks t here are many cases where some equipment or components of UST systems in the ground as of 2014 are not compatible with newer fuels. Unless owners and operators specifically requested all of the UST system be compatible with higher ethanol or biodiesel blen ds, installers probably installed lower cost options for certain UST system equipment, such as a STP assembly, which may not be compatible with some newer fuels.*[35]

This means most retail stations would have to undergo extensive retrofits to install or upgrade their existing equipment to become E85 -compatible and to be able to legally store and dispense E85.

Three marketer associations - Petroleum Marketers Association of America (PMAA), Society of Independent Gasoline Marketers of America (SIGMA), and National Association of Convenience Stores (NACS) - have indicated that the cost of replacing USTs to facilitate E85 sales can exceed $200,000 per station.[36]

In the above-referenced letter to Chairman Upton, PMAA further stated that it *"... continues to maintain that E85 fueling pumps are unlikely to achieve meaningful growth without billions of dollars in government subsidies for installation of legally compatib le underground storage tank systems and dispensers capable of handling higher content ethanol blends."* If a station is not in compliance with the applicable regulations and codes, marketers can face potential negative consequences. For example, they may have their bank loan called, may be denied an insurance claim and/or access to their state trust fund or face fines and legal action brought by the state or an individual.

According to DOE data, there were 2990 E85 stations in the U.S. in 2015. Accordi ng to the DOE web site on June 30, 2016, there are 2,806 E85 stations in the U.S., a 6% decline from the 2015 number. Although there was initial rapid growth in E85 stations (2005 – 2011), since 2010 the year-to-year growth rate in the number of E85 stati ons has declined from 118% to 5% per

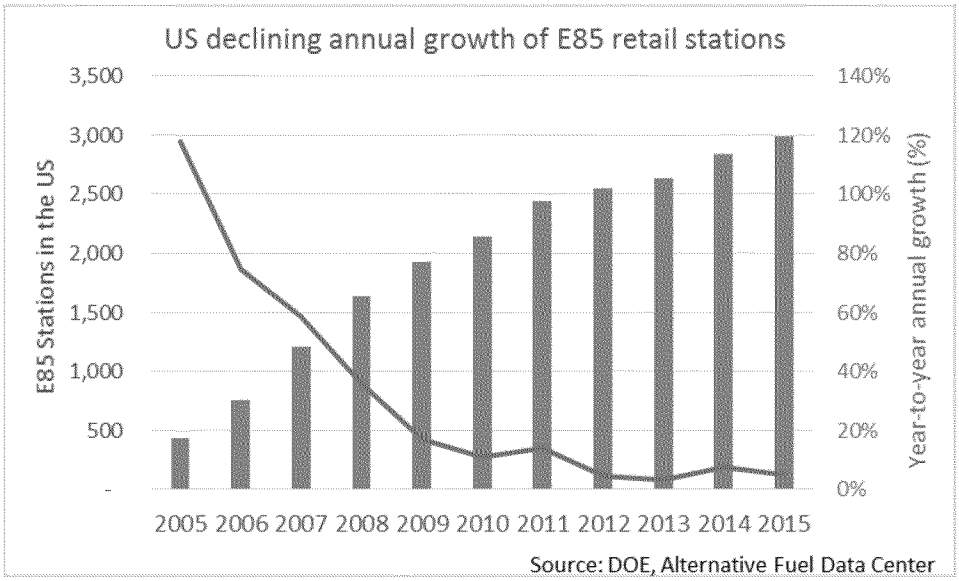
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[34] PMAA letter to Chairman Upton and Ranking Member Pallone, House Committee on Energy and Commerce, May 1, 2015. http://www.pmaa.org/weeklyreview/attachments/PMAA_Rebuttal_RFA_April_2015_FINAL%20.pdf

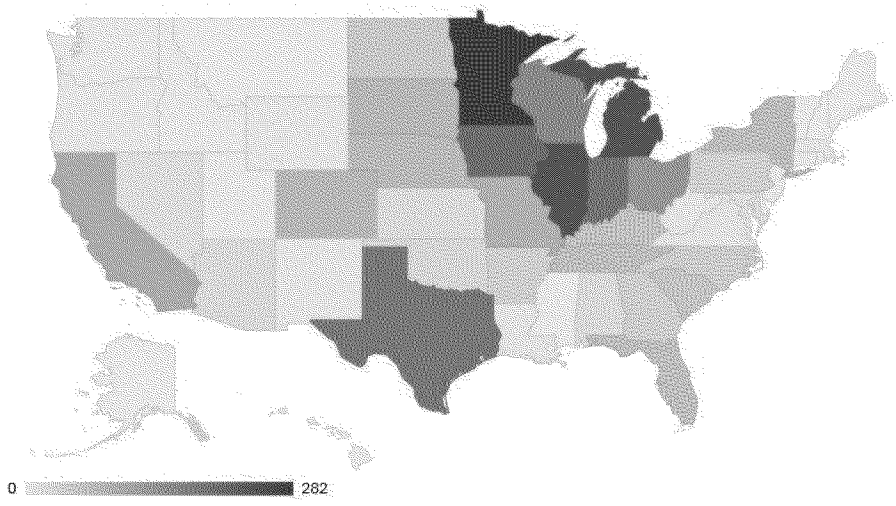
[35] EPA rule, "Revising Underground Storage Tank Regulations - Revisions to Existing Requirements and New Requirements for Secondary Containment and Operator Training," 80 Federal Register 41604 (7/15/15).

[36] SIGMA and NACS letter to Mr. John Podesta, Counselor to the President (July 10, 2014); PMAA letter to Chairman Upton and Ranking Member Pallone, House Committee on Energy and Commerce (May 1, 2015).

figure below. 2016 may represent a decrease in the number of stations if the mid -year data point holds through year-end.



E85 stations are not evenly distributed across the U.S., resulting in varied availability.[37]



(2) Small Business Impacts

Retail station ownership is dominated by small businesses among which 58% are single store owners.[38] As with any business, and even more so for small businesses, the owner must

[37] Alternative Fuels Data Center http://www.afdc.energy.gov/data/10367

carefully evaluate the economics involved. This includes product margin and volume forecasts (to gauge revenue) in addition to the investment costs needed to ensure all equipment and infrastructure meets regulatory requirements. The Fuels Institute publi cation referenced above also reported that E85 sales at the 304 locations from which they collected data averaged 2.8% of unleaded sales with a margin that was 20% lower than unleaded.

If an existing station planned to introduce E85, one or more existing products might need to be replaced, depending on whether the plans included the addition of storage tanks and modification of dispensers. For example, a retailer might consider the marg ins associated with selling E85 and compare those to the margins of the product that they were replacing. If the retailer were to replace the Premium fuel in a two -tank system with E85, then the ability to make Midgrade fuel would be lost due to the fact that Midgrade is made by blending Regular and Premium fuel at the pump. Therefore, the marketer must compare the potential margins of Premium and Midgrade together with the potential margin of E85. According to the Fuels Institute study, the "combination of margins and volume demonstrate that, over the time period being evaluated, E85 generated an average monthly profit of $789. This is less profitable than either premium ($1,193/month) or midgrade ($1,466/month)." [39] If the station were required to inves t in infrastructure changes and replace its premium and/or midgrade gasolines, these average margins show that there would be no payback on such an investment.

(3) Flexible Fuel Vehicles (FFVs)

There are currently about 1 9.6 million FFVs in operation, representing about 8% of the nation's light-duty car and truck fleet. [40] Incentives for the auto manufacturers to make more FFVs in the future have been reduced beginning with the 2016 model year and are phased out for 2019 and later model years as a result of the new NHTSA/EPA CAFE/tailpipe GHG requirements. [41] Consequently, the automakers have been reducing the number of FFV models available for consumers to purchase and growth in the number of FFVs on the road is expected to mo derate, if not decline. This expectation is reflected in the 2016 Annual Energy Outlook recently released

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[38] 2015 NACS Retail Fuels Report, p. 28 http://www.nacsonline.com/YourBusiness/FuelsReports/2015/Documents/2015-NACS-Fuels-Report_full.pdf ("There are 127,588 convenience stores selling fuel in the United States, and these retailers sell an estimated 80% of all the fuel purchased in the country. Overall, 58% of the convenience stores selling fuel are single-store operators — more than 70,000 stores.").

[39] Fuels Institute. *E85 A Market Performance Analysis and Forecast*, 2014. Accessible at: http://fuelsinstitute.org/ResearchArticles/E85_AMarketPerformanceAnalysisForecast.pdf

[40] Statement of Howard Gruenspecht Deputy Administrator Energy Information Administration U.S. Department of Energy Before the Committee on Energy and Commerce Subcommittee on Energy and Power United States House of Representatives. June 22, 2016.

[41] CAFE credits phase out in 2019, (P.L. 110-140, Section 109(a), 49 USC 32906(a)), and other CAFE, GHG (77 FR 62830-62831 and 63127-63130 (October 15, 2012)) and Tier 3 (40 CFR 80.600.117) requirements reduce or eliminate automaker incentives to produce FFVs.

by EIA which forecasts FFV sales to peak at ~2 million units in 2017 and then fall back to current levels (~1.7 million units) by 2020. [42]

3. E15 Issues

E15 is not a viable solution to the E10 blendwall because E15 is incompatible with most of the existing vehicle fleet, the existing refueling infrastructure, and due to the potential liability issues associated with marketing the fuel. The hurdles to E15 will remain for the scope of this rulemaking, and the foreseeable future as significant changes in infrastructure and the vehicle fleet will take many years.

a) E15 Incompatibility with the Existing Vehicle Fleet

No automobile manufacturer has stated that their model year 2011 and older gasoline vehicles are compatible with E15. Manufacturers of many new vehicles today have stated that the use of E15 may damage vehicle engines and will not be covered under vehicle warranties. With an average vehicle age of 11.5 years, [43] the overwhelming majority of vehicles on the road today have neither been certified nor warranted for ethanol blends above 10 volume percent, and every automaker has declined to extend warranty coverage if its legacy vehicles are operated using E15.[44] E15 is only compatible with Flexible Fuel Vehicles ("FFVs") and some newer model year cars specifically designed to accommodate E15. Together, ethanol blends exceeding 10 volume-percent are only compatible with approximately 10 percent of vehicles on the road.[45] Auto manufacturers' models recommendations for E15 use in non -flex fuel vehicles as of January 2015 are summarized in the following chart:

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[42] EIA, *Annual Energy Outlook 2016 Early Release*, May 17, 2016

[43] IHS, Average Age of Light Vehicles in the U.S. Rises Slightly in 2015 to 11.5 years, IHS Reports. July 29, 2015 Accessed June 13, 2016 at http://press.ihs.com/press-release/automotive/average-age-light-vehicles-us-rises-slightly-2015-115-years-ihs-reports

[44] http://sensenbrenner.house.gov/UploadedFiles/E15_Auto_Responses.pdf

[45] Based on API analysis of retail sales data published by Automotive News, estimates of the stock of FFVs and total light-duty vehicles in operation published in the EIA Annual Energy Outlook 2015 Reference Case, and auto manufacturer reports of E15-compatible vehicles by model year

Manufacturer	Model Year															
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
BMW	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Chrysler	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Most[6]
Ford	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes
GM	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Most[4]	Most[4]
Honda/Acura	No	No	No	No	No	No	No	No	No	No	No	No	No	Some[1]	Yes	Yes
Hyundai/Kia	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Jaguar/Land Rover	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes
Mazda	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Mercedes	No	No	No	No	No	No	No	No	No	No	No	No	No	No[2]	No[2]	No
Mitsubishi	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Nissan/Infiniti	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Subaru	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Toyota/Lexus	No	No	No	No	No	No	No	No	No	No	No	No	No	Some[3]	Most[5]	Most[5]
VW/Audi/Porsche	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes
Volvo	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

E15 Chart Sources:
http://www.edmunds.com/ownership/howto/articles/120189/article.html
and auto company contacts

[1]Accord, Civic, Crosstour, CR-V, CR-Z, Insight, Odyssey, Pilot; Acura: ILX, MDX, RDX, RLX, but not TL, TSX, TSX Wagon

[2]Some owner manuals for 2014 and 2015 incorrectly stated that E15 was allowed.

[3]Avalon, Camry, Corolla, Highlander, iQ, Prius, RAV-4, Scion tC, Sienna, Venza; Lexus: CT200H, ES350, GS300/350, GS450H, IS250, IS350, LS460, RX350, RX450H, but not 4Runner, FJ Cruiser, Land Cruiser, Sequoia, Tacoma, Tundra, Yaris; Lexus: IS250C, IS350C, IS F, GX460, LX570

[4]Not Chevrolet City Express

[5]Not FR-S, xB (model discontinued after 2015).

[6]Not Dodge Viper

Reprinted below are excerpts from auto industry responses to Congressman Sensenbrenner's questions about warranties for vehicles that have been operated with E15.[46]

Automaker	E15 Warranty	Excerpts from Sensenbrenner Response
Nissan	No	We are not at all confident that there will not be damage to MY 2001 and later vehicles with E15
Volkswagen	No	Volkswagen agrees that EPA did not conduct an adequate test program when E15 was considered
Volvo	No	The risks related to emissions are greater than the benefits in terms of CO2 when using low-blend E15 for variants that are designed to E10.
BMW	No	The BMW Group engines and fuel supply systems can be damaged by misfueling with E15.
Hyundai	No	The EPA tests failed to conclusively show that the vehicles will not be subject to damage or increased wear.
Kia	No	EPA testing failed to determine that vehicles will not be subject to damage or increased wear.
Chrysler	No	We are not confident that our vehicles will not be damaged by E15
Ford	No	Ford does not support the introduction of E15 into the marketplace for the legacy fleet
General Motors	No	We are not confident that our vehicles will be undamaged by the use of E15.
Mercedes-Benz	No	Any ethanol blend above E10, including E15, will harm emission control systems in M-B engines
Honda	No	Vehicle engines were not designed or built to accommodate higher concentrations of ethanol
Mazda	No	The record fails to demonstrate that motor vehicles would not be damaged
Toyota	No	Toyota cannot recommend the use of fuel with greater than E10 for Toyota vehicles

The ethanol industry recommends following automobile owner's manuals. The Renewable Fuels Association has made the following statement: "The best advice to give to consumers is for them to read their owner's manuals and follow the advice of the company that provides the warranty, and built the product."[47] As discussed here, only a small subset of the vehicle fleet in the U.S. is warranted by the automobile manufactures for E15.

[46] *Id.* http://sensenbrenner.house.gov/UploadedFiles/E15_Auto_Responses.pdf
[47] http://www.ethanolrfa.org/exchange/entry/read-the-label/

Tests conducted by the Coordinating Research Council (CRC) showed that ethanol concentrations in gasoline that exceed 10 percent can lead to engine and fuel system damage.[48] Below is a description of the testing itself, the test results, and potential consequences that the test results support.

E15 Fuel Systems and Engine Durability Testing and Results[49]

CRC began testing fuel pump and fuel level systems in 2008 using established testing procedures widely used within the automotive industry to evaluate and predict new product life. Tests were done on fuel pumps and fuel level systems on popular 2001 and newer gasoline light-duty vehicles with actual fleet penetration likely greater than 29 million vehicles in total. Fuel systems were evaluated using two testing protocols, a soak test (i.e., immersion) and an endurance test (i.e., "continuous" operation).

To evaluate engine durability, CRC employed the testing protocols used by a participating OEM. The testing cycle was designed to simulate the accumulation of approximately 100,000 miles. Eight pairs of popular 2001 and newer models were tested.

The results of the testing demonstrate that not all vehicles tested showed damage, as some fuel systems and engines passed with no problems. However, the fuel pump systems on popular 2001 and newer gasoline light-duty vehicles failed or exhibited other adverse effects during testing on E15. E15 caused swelling in some pump impellers – a key component of the fuel pump that moves fuel into the fuel line. As the fuel pump impellers swelled, the component jammed against is housing, resulting in the loss of vanes and causing fuel flow to halt. Two popular gasoline engines used in light-duty automotive applications of vehicles from model years 2001 and newer failed with mechanical damage when operated on E15.

The test results demonstrate there are potential negative consequences for consumers. The impacted vehicles are popular 2001 and newer vehicles that are approved for use with E15 by EPA. Fuel pumps seized with E15 on both the soak test and the endurance test, which would cause the engine to stop, potentially putting motorists at risk. Fuel Level Sender Systems were found to send erratic or "dirty" signals (e.g., indications of noise, spikes). In addition to potentially false tank readings on the instrument panel, the erratic signals could negatively impact the operation of the onboard diagnostic system. Engine durability results showed valve and valve seat damage that result in a loss of compression, excess emissions, and poor performance that may require expensive repair work. It is worth noting that the CRC tests

[48] Coordinating Research Council, *"Intermediate-level Ethanol Blends Engine Durability Study,"* April 2012; Coordinating Research Council, *"Durability of Fuel Pumps and Fuel Level Senders in Neat and Aggressive E15."*

[49] "Intermediate Level Ethanol Blends Engine Durability Study", April 2012, http://www.crcao.com/reports/recentstudies2012/CM-136-09-1B%20Engine%20Durability/CRC%20CM-136-09-1B%20Final%20Report.pdf; Durability of Fuel Pumps and Fuel Level Senders in Neat and Aggressive E15, January 2013 http://www.crcao.org/reports/recentstudies2013/CRC%20664%20[AVFL-15a]/AVFL%2015a%20[CRC%20664]%20Final%20Report%20only.pdf

assessed long-term damage and may not be reflective of effects associated with short -term (i.e. single tank) use of E15.

b) E15 Incompatibility with Existing Fuel Retail Infrastructure

In addition, E15 is incompatible with the existing refueling infrastructure. As much as half of the retail gasoline infrastructure may not be compatible with ethanol blends above 10 percent.[50] Prior to 2010, Underwriters Laboratories (the primary Nationally Recognized Testing Laboratory) had not listed a single dispenser as compatible with any alcohol concentration greater than 10 percent. Given that states require this certification and that dispensers have useful lives greater than 20 years, the vast majority of dispensers in the country are not currently authorized to dispense E15. The same issue exists with the underground storage tanks and piping systems. Approximately 96% of the gasoline stations in th e country are independently owned and it is beyond the control of the obligated parties to require investments to make those stations compliant.[51]

Stakeholders in the ethanol industry have asserted[52] that the law requires obligated parties – refiners and importers – to invest in retail infrastructure to offer higher ethanol blends even though such obligated parties own less than five percent of the retail gasoline stations. Such assertions are unsubstantiated and simply false. CAA section 211(o) does not require any party to invest in retail infrastructure, nor can any such obligation be implied in the law or EPA's implementing regulations. As EPA has recognized in the past, members of the renewable fuel industry are free to invest in such infrastructure – it is after all, their product that they are trying to force on consumers.[53] Indeed, if members of the ethanol industry truly believed that the only market impediment to greater consumption of E15 and E85 were a lack of fueling pumps, they should be wil ling to invest in retail fueling stations so that they could profitably satisfy the rewards of alleged unmet consumer demand for higher ethanol blends.

In 2010 and 2011 EPA granted partial waivers to allow gasoline that contains 15% ethanol, yet there has been very little introduction of E15 in the marketplace. The proposed rule discusses the USDA Biofuel Infrastructure Partnership grant funding that EPA expects will increase number of E15 stations by nearly 1,500. EPA makes several assumptions regardin g the BIP that are unsupported and optimistic: all 1500 stations will be in service for the full year in 2017; all stations will offer E15; and E15 sales will be 50% of total gasoline at all stations. It is also

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[50] Larry Gregory Consulting, LLC. "A Comprehensive Analysis of Current Research on E15 Dispensing Component Compatibility" March 2012. Found at http://www.api.org/news-and-media/news/newsitems/2012/aug-2012/~/media/Files/Policy/Alternatives/E15-Infrastructure-Comprehensive-Analysis.ashx

[51] PMAA letter to Chairman Upton and Ranking Member Pallone, House Committee on Energy and Commerce, May 1, 2015. http://www.pmaa.org/weeklyreview/attachments/PMAA_Rebuttal_RFA_April_2015_FINAL%20.pdf

[52] http://www.ethanolrfa.org/pages/big-oil-builds-the-blend-wall,

[53] Proposed Rule, Renewable Fuel Standard Program: Standards for 2014, 2015, and 2016 and Biomass-Based Diesel Volume for 2017, Docket ID No. EPA-HQ-OAR-2015-0111

important for EPA to keep in perspective that there are approximately 153,000 retail fuel stations in the U.S.;[54] and just 1% would carry E15 if the expectations of the BIP program are met.

The retail refueling system in the United States grew organically as private enterprise made capital investments to sell consumers products that they demanded. There is nothing stopping members of the ethanol industry from doing the same to bring to market more E15, E85, and other renewable fuels to consumers. In fact, the number of retail fuel stations has declined significantly in the past several years, suggesting that there are opportunities for members of the renewable fuel industry to construct renewable fuel fueling stations to provide E15, E85 and other renewable fuels to consumers. If the renewable fuels industry believes there is consumer demand and economic benefits from making such investments and is willing to accept the potential liability for selling fuels that are not compatible with consumers' vehicles, then it is reasonable to expect *the renewable fuel industry* will make such investments. It is not reasonable to forecast that obligated parties or independent retailers will make potentially uneconomic decisions and then base RFS standards on such an assumption.

c) Liability Concerns

Finally, the potential liability issues associated with marketing E15 fuel will hinder its introduction. EPA must factor in the risks and potential liabilities presented by E15 in terms of vehicle and infrastructure incompatibility. EPA must avoid promul gating a rule that incentivizes the manufacture and sale of a fuel product (E15) that carries with it a number of substantial (and unresolved) liability issues. Specifically, E15:

- Could damage engines and other systems in millions of vehicles that have been "approved" by EPA for E15, but which are unapproved for such fuel by the vehicle manufacturers and for which use may void the vehicle warranty;
- Is illegal for use in tens of millions of older automobiles, trucks, off -road vehicles, boats and small-equipment products, and may decrease the availability of the gasoline required by owners of these products;
- Results in diminished fuel economy for most vehicles, thus reducing vehicle efficiency;
- Is incompatible with, and thus cannot legally be stored in or dispensed from, the vast majority of the existing gasoline retail distribution system, requiring enormous costs to upgrade retail systems.

A recent Report by Iowa Department of Revenue shows that the average per station E15 sales in Iowa is only 15% of average per station E10 sales.[55] Given this history and the concerns raised in

[54] The Fuels Institute, *A Market Performance Analysis and Forecast*, 2014.
[55] "2015 Retailers Fuel Gallons Annual Report," Kathy Harpole, Research and Analysis Division, Iowa Department of Revenue, April 2016

this section, the EPA's aspirational goal of half of the gasoline sold at the average retail gasoline station being E15[56] is unlikely at best.

4. Conventional Renewable Imports

Since 2013, when EPA's RFS standards breached the E10 blendwall , EPA's EMTS has reported sharp annual increases in D6 RINs from renewable diesel and biodiesel and simultaneously a n increase in import s of D6 RINs. Similarly, EIA has reported high biodiesel imports from Indonesia, a major palm oil producer and exporter. In its 2012 NODA, EPA presented data that disqualified palm oil biodiesel /renewable diesel from being categorized as conventional renewable fuel.[57] In a recent 2016 report funded by the European Commission,[58] GHGs emitted from land use change using palm oil as biodiesel feedstock are estimated at 23 1 gCO2e/MJ of biofuel produced, resulting in palm oil to biodiesel pathway GHG emissions that are greater than 200% higher than diesel fuel emissions. Nonetheless, palm oil imports into the U.S. have been permitted to qualify for the RFS due to grandfathering provisions of the Energy Independence and Security Act of 2007 (EISA).

A direct implication of setting renewable fuel volume sta ndards that exceed the ethanol blendwall is that it encourages imported biodiesel that is produced from palm oil [59]. EPA's own analysis[60] finds that biodiesel produced from palm oil fails to meet GHG emission reduction requirements of the RFS, except it is allowed if it meets grandfathering provisions of EISA. Biodiesel imports into the U.S. from Indonesia, a leading palm oil producing cou ntry, have increased from zero in 2012 to 73 million gallons in 2015[61]. This outcome of increased palm oil biodiesel consumption in the U.S. is another inconsistency with EISA's stated purpose to "…to increase the production of clean renewable fuels…"

In the 2017 RFS proposal, EPA set the conventional volume at 14.8 billion RINs or 10.42% of the gasoline pool if all conventional biofuel were ethanol, hence breaching the E10 blendwall. In Table IID.1 of the proposal, EPA assum es 400 million gallons of con ventional biodiesel/renewable diesel are included in the conventional D6 pool. This continued practice of EPA to encourage imports from grand fathered facilities, including palm based biodiesel/renewable diesel results in significant increases in GHGs, contrary to the stated intents of the Agency to lower GHGs.

API recommends that EPA remove the 400 million gallons of conventional biodiesel/ renewable diesel from the calculated standards volume.

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[56] Page, 34800 "Since the average retail station will sell about 950 thousand gallons of gasoline in 2017, 800 million gallons of E15 could be sold if about half of the gasoline sold at each of these 1,700 stations was E15."

[57] https://www.epa.gov/renewable-fuel-standard-program/learn-more-about-notice-data-availability-noda-renewable-fuels

[58] ec.europa.eu/energy/sites/ener/files/documents/Final%20Report_GLOBIOM_publication.pdf

[59] http://www.theicct.org/blogs/staff/unexpected-tax-bill-for-imported-palm-oil-biodiesel

[60] https://www.epa.gov/sites/production/files/2015-08/documents/420f11046.pdf

[61] www.eia.gov/dnav/pet/pet_move_impcus_a2_nus_EPOORDB_im0_mbbl_a.htm

B. Advanced Biofuels Volume

EPA is proposing to again set an aggressive advanced biofuel target in 2017. EPA proposes a 2017 advanced biofuel volume requirement of 4 billion gallons, which is a 600 million gallon increase over the proposed volume of 3.4 billion gallons for 2016. Using EMTS data up to and including May 2016, the 2016 annualized volume for advanced biofuels is approximately 3.2 billion ethanol equivalent RINs.

In the Proposed Rule, EPA applied most, but not all, of its exercise of the cellulosic waiver to the advanced biofuel and total renewable fuel RVOs. Due to the nested nature of the standards, to lower the overall cost of the program to consumers and to make the regulations more achievable, EPA should always extend the full volume of any cellulosic waiver to both the advanced biofuel and the total renewable fuel RVO requirements.

Sugar cane ethanol use has decreased over the last few years. According to data from EIA that show renewable fuel imports from Brazil have decreased down to zero for the first four months of 2016.[62] Therefore, EPA should not presume any sugarcane imports in 2017 given the issues associated with the ethanol blendwall. If, however, EPA does presume that some of the advanced biofuel obligation will be met with sugarcane ethanol, it is necessary to consider this volume when assessing the total ethanol that can be consumed in 2017. In other words, given the constraints of the blendwall, EPA should presume any sugarcane ethanol will displace domestic corn ethanol.

Our recommended forecast of advanced biofuel volumes available in 2017 is summarized in the table below. The advanced biofuel volume standard for 2017 should be set at 3.2 billion gallons.

2017 Advanced Biofuel Volume Standard Recommendations

	Billion RINs
Biomass-Based Diesel D4 RINs[63]	3.0
Cellulosic Biofuel D3 & D7 RINs	Last 3 months annualized (estimated at 0.2 billion)[64]
Sugar Cane Ethanol D5 RINs	0.0
Total Advanced Biofuel RINs	3.2

[62] U.S. Imports by Country of Origin https://www.eia.gov/dnav/pet/pet_move_impcus_a2_nus_epooxe_im0_mbbl_m.htm

[63] [63] 2.0 billion gallons X 1.5 equivalency value. The biomass-based diesel number is based on the 2 billion gallon mandate that EPA has finalized for 2017. That mandate is currently in litigation. Should the court require EPA to lower the biomass-based diesel volume for 2017, the values for biomass based diesel, advanced, and general renewable in this table should all be adjusted accordingly.

[64] Based on March, April & May 2016 cellulosic RIN generation per EPA's EMTS website.

C. Cellulosic Biofuels Volume and Concerns with EPA's Methodologies

EPA must conduct a *thorough* and *objective* assessment of likely cellulosic biofuel production for 2017 before setting RFS standards for that year. If EPA overestimates cellulosic biofuel production, it will cause fees to be imposed on obligated parties through no fault of their own, and will likely exacerbate issues that can undermine the stability and effectiveness of the RFS.

To provide some context for our comments below, it is useful to briefly review EPA's previous attempts to estimate cellulosic biofuel production. In several earlier proposals, the Agency has attempted to develop a methodology that can accurately assess the likely cellulosic biofuel production in the upcoming year. Each year EPA has recognized that cellulosic biofuel production would not meet the statutory volumes and has therefore reduced the cellulosic biofuel applicable volume as required by § 7545(o)(7)(D). Despite those reductions, EPA grossly overestimated cellulosic biofuel production every year from the program's inception in 2010 through 2014[65]:

Compliance Year	Statutory requirement (gallons)	EPA Projected production (gallons)	Actual production (gallons)	Extent of EPA Error
2010	100 million	5 million	0	100%
2011	250 million	6.6 million	0	100%
2012	500 million	8.65 million	20,069	99.8%
2013	1 billion	6 million	810,185	86.5%
2014	1.75 billion	67 million (≤17 million liquid cellulosic; 50 million CNG/LNG)	33.1 million (≤0.83 million liquid cellulosic; 32.6 million CNG/LNG)	95.1% (liquid cellulosic) 50.7% (total cellulosic)[66]

[65] The statutory requirements in this table are set forth in 42 U.S.C. § 7545(*o*)(2)(B)(i)(III). The EPA projected production levels are set forth in the final rules for 2010 –2013 and the NPRM for 2013. *See* 75 Fed. Reg. 14,670 (2010 final rule); 75 Fed. Reg. 76,790 (2011 final rule); 77 Fed. Reg. 1,320 (2012 final rule); 78 Fed. Reg. 49,794 (2013 final rule); 78 Fed. Reg. 71,732 (2014 NPRM). The actual production totals are drawn from EPA's Public Data for the Renewable Fuel Standard website, https://www.epa.gov/fuels -registration-reporting-and-compliance-help/public-data-renewable-fuel-standard, and from two memoranda: Memorandum from Dallas Burkholder, Office of Transportation and Air Quality, EPA, to Air and Radiation Docket EPA -HQ-OAR-2015-0111, *Assessment of Cellulosic Biofuel Production from Biogas (2015 –2016)*, at 2 (Apr. 27, 2015); Mem orandum from Dallas Burkholder, Office of Transportation and Air Quality, EPA, to Air and Radiation Docket EPA -HQ-OAR-2016-0004, *April 2016 Assessment of Cellulosic Biofuel Production from Biogas (2017)*, at 2 (Apr. 2016).

[66] EPA's final rule for 2014 ha s an error rate of 0% because it adopts the actual production level and was published 11 months after the compliance year ended. *See* 80 Fed. Reg. 77,502. The data in the 2014 row above are based on the projected totals set forth in the 2014 proposed rule ,

The D.C. Circuit held EPA's 2012 cellulosic biofuel projection was arbitrary and capricious and vacated the 2012 cellulosic biofuel RFS. *API*, 706 F.3d at 474. The Court concluded that the CAA does not allow EPA "to adopt a methodology in which the risk o f overestimation is set deliberately to outweigh the risk of underestimation." *Id.* at 479. It further emphasized that EPA acted arbitrarily and capriciously by not "tak[ing] neutral aim at accuracy" in its projection, and that the CAA requires EPA to det ermine "what will *actually* happen." *Id.* at 476, 479 (emphasis in original).[67] EPA is *not* permitted to "try[] hard to push the envelope" – in direct contradiction with the court's prior admonition.[68]

There has been an increase in cellulosic biofuels over th e past couple years due to EPA adopting an expanded definition of "cellulosic biofuel." In July 2014, EPA approved a new pathway under which compressed natural gas ("CNG") and liquefied natural gas ("LNG") derived from landfills and similar sources qualif y as cellulosic biofuel. *See* 79 Fed. Reg. 42,128 (July 18, 2014). EPA's expansion of the definition of cellulosic biofuel to include CNG/LNG "led to a significant increase in cellulosic RIN generation" beginning "in late 2014." 80 Fed. Reg. 77,499. Indeed, the "vast majority" of the cellulosic biofuel RINs generated in 2014 —"approximately 32 million" out of 33 million total —were for CNG or LNG. *Id.* at 77,502 n.209.[69] The same holds

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issued November 29, 2013—one day before the *final* rule for 2014 was due under the CAA. *See* 78 Fed. Reg. 71,732, 71,750 –51; 42 U.S.C. § 7545(*o*)(3)(B)(i). The difference between liquid cellulosic biofuels and total cellulosic biofuels is explained below and results from EPA's approval in July 2014 of a new pathway for renewable compressed natural gas (CNG) and liquefied natural gas (LNG) to be counted as cellulosic biofuel.

[67] Following the D.C. Circuit's decision, EPA acknowledged that its 2011 cellulosic biofuel requirements was also flawed, and reduced the requirements for 2011, 2012, and 2013 to match the number of cellulosic RINs actually made available for those years. *See, e.g.*, 79 Fed. Reg. 25,025 (May 2, 2014) (direct final rule re-setting 2013 cellulosic biofuel standard).

[68] EPA Newsroom. Speeches by Administrator Gina McCarthy, Remarks at National Corn Growers Association, As Prepared, July 16, 2015.

[69] EPA has publicly released monthly breakdowns of the number of cellulosic biofuel RINs generated from CNG/LNG in 2014 and 2015. *See* Memorandum from Dallas Burkholder, Office of Transportation and Air Quality, EPA, to Air and Radiation Docket EPA-HQ-OAR-2015-0111, *Assessment of Cellulosic Biofuel Production from Biogas (2015 –2016)*, at 2 (Apr. 27, 2 015); Memorandum from Dallas Burkholder, Office of Transportation and Air Quality, EPA, to Air and Radiation Docket EPA -HQ-OAR-2016-0004, *April 2016 Assessment of Cellulosic Biofuel Production from Biogas (2017)* , at 2 (Apr. 2016). However, EPA has not pub licly released monthly breakdowns of the number of RINs generated from conventional liquid cellulosic biofuel, and instead has treated this information as confidential business information (CBI). The maximum volume of conventional liquid cellulosic biofue l production can be derived by subtracting the number of RINs reported for CNG/LNG from the total number of cellulosic biofuel RINs reported for each month on EPA's website. *See, e.g.*, EPA, *2015 Renewable Fuel Standard Data* (May 10, 2016), https://www.epa.gov/fuels-registration-reporting-and-compliance-help/2015-renewable-fuel-standard-data. The difference between those sums constitutes the maximum number of conventional liquid cellulosic biofuel RINs, rather than the actual number of such RINs, due to production of nontraditional cellulosic biofuels such as heating oil, and due to after -the-fact RIN generation error corrections. Workshee ts showing the

true for 2015, as EPA estimated that over 94% of cellulosic biofuel pro duction would be from CNG/LNG for the final three months of the year. *See* 80 Fed. Reg. 77,506. But for the expansion to include CNG/LNG, EPA's annual error rate in estimating the annual level of cellulosic biofuel production would remain well above 90%. In its NPRM for the 2014 program year, EPA estimated that 17 million gallons of liquid cellulosic biofuel would be produced in 2014. 78 Fed. Reg. 71,748. Actual liquid cellulosic biofuel production in 2014 was at most 0.83 million RINs.[70] Thus, had EPA not amended the definition of cellulosic biofuel by adding the CNG/LNG pathway, EPA's 2014 estimate would have been off by 95.1%. Similarly, while EPA forecast in its 2014 –2016 final rule that 2 million gallons of liquid cellulosic biofuel would be produced in the fourth quarter of 2015, *see* 80 Fed. Reg. 77,505 –06, EPA records show that at most 0.58 million gallons were produced during that period.[71] Thus, EPA's estimate—issued in November 2015 for October –December 2015—overshot the mark by at least 71%. The simple truth is that EPA's model is not designed to, and does not in fact, forecast "what will *actually* happen." *API*, 706 F.3d at 479.

The Proposed Rule repeats these errors by applying the same methodology for 2017. As in recent years, the Proposed Rule analyzes the CNG/LNG and conventional (liquid) cellulosic biofuel markets separately. EPA's estimates for both fuel sub -categories are arbitrary and capricious, and must be substantially reduced in the final rule.

1. Estimated Liquid Cellulosic Biofuel Production

The Proposed Rule estimates that 30 million gallons of liquid cellulosic biofuel will be produced in 2017—more than *ten times* the amount of liquid cellulosic biofuel produced in 2015. 81 Fed. Reg. 34,806. This estimate is flawed in numerous respects.

2. Individual Facility Production Ranges

The Proposed Rule's method for calculating the production ranges for each facility "runs counter to the evidence before the agency" and "is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). This is so for four reasons.

First, EPA's unquestioning acceptance of producers' projected start -up dates is unreasonable in light of past experience. EPA has consistently erred in forecasting liquid cellulosic biofuel facility start-up dates in prior years. In nearly every case, EPA has adopted start -up dates that prove to be months or years earlier than a facility's actual start-up date.[72]

Given EPA's long history of adopting overly optimistic projected start -up dates, it is incumbent on EPA to come forward with hard evidence that the start -up dates in the Proposed Rule are

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maximum number of conventional liquid cellulosic biofuel RINs for 2014 and 2015 are attached as Appendix C.

[70] *See* Appendix C (2014 worksheet).

[71] *See* Appendix C (2015 worksheet).

[72] For examples, see Appendix B at 7-8.

grounded in fact and describe "what will *actually* happen." *API*, 706 F.3d at 479. The Proposed Rule fails to carry this burden; indeed, it provides no meaningful evidence that the projected start-up dates it adopts are any more realistic than the start-up dates adopted in prior years. Nor does EPA factor into its analysis the possibility that new liquid cellulosic plants will repeatedly miss their target start-up dates for years on end, as the Cool Planet, DuPont, and Poet-DSM plants have.

Second, EPA's use of a six-month ramp-up to expected capacity is unreasonable in light of past experience. *See* 81 Fed. Reg. 34,805. EPA has produced no evidence that a six-month ramp-up period is reasonable, and so far as API is aware, no liquid cellulosic biofuel facility capable of producing commercial-scale quantities of fuel has *ever* reached planned capacity within six months. Indeed, as of December 2015, "[n]o biofuel startups have managed to produce a next-generation biofuel at commercial scale in the U.S.," period.[73] The record shows that many facilities take a year or more to reach even a fraction of design capacity.[74]

It is true that the Proposed Rule employs a six-month ramp-up only to compute "the high end of the projected production range for each group of companies." 81 Fed. Reg. 34,805. But EPA has offered no evidence that a six-month ramp-up period is attainable even under the best of circumstances.[75] Despite the abundance of data on ramp-up periods from past years, the Proposed Rule does not cite one example in which a facility achieved substantial production within six months of initial production. Even if EPA could identify a handful of instances in which a facility did ramp up to full capacity within six months, that data would need to be balanced against the considerable data showing that it takes facilities years to ramp up to meaningful production, and against the data showing that facilities often go out of business before generating *any* cellulosic biofuel RINs.

Third, EPA failed to consider the possibility that facilities would encounter difficulties that cause them to fall below prior production levels, or even to zero. *See* 80 Fed. Reg. 77,503–05 (setting the low end of the range for companies with "consistent commercial scale production" at a level equal to those companies' "actual production volumes" over the preceding 12-month period). This omission is unreasonable given the considerable evidence that cellulosic biofuels producers are often unable to sustain production levels over extended periods.[76]

The Proposed Rule incorporates by reference the methodology used in EPA's final rule for 2014–2016, *see* 81 Fed. Reg. 33,804, which concedes that "the low end of the range does not necessarily represent a worst-case scenario," 80 Fed. Reg. 77,503. Indeed, "[t]he worst-case scenario for any" facility "is no production." *Id.* Yet in spite of these concessions and the data above, EPA nevertheless concludes that "it is generally appropriate to use the production over

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[73] Katie Fehrenbacher, *How Tech Billionaire Vinod Khosler's Biofuel Dream Went Bad*, Fortune (Dec. 15, 2015), http://fortune.com/kior-vinod-khosla-clean-tech/.

[74] For examples, see Appendix B at 7-8.

[75] In fact, EPA has even acknowledged there has been a "history of start-up delays and missed production targets in the cellulosic biofuels industry." 80 Fed. Reg. at 77,503.

[76] For examples, see Appendix B at 9-11.

the previous 12 months as the low end of the range." *Id.*; *see also* 81 Fed. Reg. 34,805 ("The low end of the range for each group . . . reflects actual RIN generation over the last 12 months for which data are available."). EPA's view of what is "generally appropriate" is not consistent with the facts or with the CAA's command that the agency take "neutral aim at accuracy." *API*, 706 F.3d at 724. The Proposed Rule cites no data in support of its approach, and the record overwhelmingly shows that the low end of a facility's future production range is *not* the facility's production over the past year.[77]

EPA should remedy this error by adopting zero as the low end of the expected range for each conventional liquid cellulosic biofuel facility. Such an approach would better harmonize with past experience and better predict "what will *actually* happen" in the future. *API*, 706 F.3d at 479.

Fourth, the Proposed Rule ignores completely several producers that EPA has relied upon in prior rulemakings, but which went out of business or have been unable to produce meaningful volumes of liquid cellulosic biofuel.[78] The Proposed Rule (and its supporting memorandum)[79] do not acknowledge or discuss Cool Planet and INEOS Bio, two firms that EPA relied upon in fashioning its final rule for 2016. *See* 80 Fed. Reg. 77,508. As discussed in Appendix B, neither of these firms has produced cellulosic biofuel RINs in recent years, and neither of them is expected to begin producing such RINs any time soon. Nor does the Proposed Rule "reflec[t] on" the failures of other liquid cellulosic biofuel producers in past years, despite the abundance of available and highly relevant data. *API*, 706 F.3d at 427. An agency seeking to take "neutral aim at accuracy," *id.*, may not bury its head in the sand in this fashion.[80]

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In each of these respects, EPA's failure to take account of past "experience" and to "reflec[t] on the success of earlier [projections]" constitutes arbitrary and capricious decision making. *API*, 706 F.3d at 427; *see also State Farm*, 463 U.S. at 29 (rule invalid where agency has "entirely failed to consider an important aspect of the problem" or "offered an explanation that runs counter to the evidence before the agency").

3. 25th Percentile Model for Forecasting Production by "New" Facilities

EPA's assumption that new facilities with no track record of RIN generation will produce cellulosic biofuel volumes in the 25th percentile of that facility's estimated production range is unreasonable and contrary to the record. *See* 81 Fed. Reg. 34,806.

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[77] The roster of companies that once produced liquid cellulosic biofuel, but are no longer in business, illustrate the point. Together, EPA's final rules for 2010 through 2013 list numerous companies that fall into this category.

[78] For examples, see Appendix B at 11-12.

[79] Memorandum from Dallas Burkholder, Office of Transportation and Air Quality, EPA, to Air and Radiation Docket EPA-HQ-OAR-2016-0004, *April 2016 Assessment of Cellulosic Biofuel Production from Biogas (2017)*, at 2 (Apr. 2016).

[80] For further discussion, see Appendix B at 13-14.

EPA provides no factual support for the 25th percentile method, which amounts to an assumption that new facilities will produce at approximately 23.5% of design capacity.[81] Historically, new facilities produce at approximately 3 percent of capacity. In fact, industry-wide, cellulosic biofuel facilities—new and established—failed to reach 3 percent of capacity in 2015.[82] Among other things, EPA failed to consider whether a 10th percentile of 5th percentile model would better explain the available data.

EPA should rectify this error by adopting a percentile model that is in line with the record. The data above shows that 2.8% of capacity is a more accurate estimate for cellulosic biofuel production from facilities without a proven production track record.[83] Applying this model to the aggregate design capacity of 51 million gallons for facilities without prior commercial-scale production[84] would yield an estimate of 1.4 million gallons of cellulosic biofuel production in 2017 for new liquid cellulosic biofuel producers, rather than the projection of 12 million gallons included in the Proposed Rule. *See* 81 Fed. Reg. 34,806.

4. 50th Percentile Model for Forecasting Production By "Established" Facilities

EPA's assumption that facilities with "consistent commercial scale production" will produce in the 50th percentile of their estimated production range is equally invalid. As with the 25th percentile method, EPA provides no factual support for its approach, and the approach is contrary to record evidence from prior program years. Indeed, the 50th percentile model bears no relationship whatsoever to the available data.[85]

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[81] This calculation is based on the reported design capacities for DuPont (30 million gallons) and GranBio (21 million gallons). A precise calculation is impossible because the Proposed Rule does not provide a design capacity for Edeniq, the third firm in the new-producer data set. *See* 81 Fed. Reg. 34,805 (stating "various" as Edeniq's "Facility capacity"). API is unable to construct an estimate for Edeniq because the record material pertaining to Edeniq's production is designated as CBI. *See, e.g.*, Edeniq Call Notes 3.10.16, https://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2016-0004-0023. Thus, the utilization rate given above thus assumes that Edeniq's capacity is zero.

[82] According to the 2014–2016 final rule, design capacity was at least 105 million gallons in 2015, excluding facilities for which no specific capacity was provided (e.g., Edeniq) or for which production was not expected to begin until 2016. *See* 80 Fed. Reg. 77,501. The maximum possible level of actual liquid cellulosic biofuel production was 2.3 million gallons, or 2.2 percent of industry-wide design capacity.

[83] This ratio is based on the highest industry-wide production rate since the cellulosic biofuel program began in 2010—2.8% of cumulative design capacity in the fourth quarter of 2015.

[84] *See, e.g.*, National Renewable Energy Laboratory, Technical Report, *2015 Survey of Non-Starch Ethanol and Renewable Hydrocarbon Biofuels Producers*, at 5 (Jan. 2016), *available at* http://www.nrel.gov/docs/fy16osti/65519.pdf; *Robert Rapier, Cellulosic Ethanol Falls A Few Billion Gallons Short*, Energy Trends Insider (Feb. 13, 2016), http://www.energytrendsinsider.com/2016/02/13/cellulosic-ethanol-falls-a-few-billion-gallons-short/; Katie Fehrenbacher, *How Tech Billionaire Vinod Khosler's Biofuel Dream Went Bad*, Fortune (Dec. 15, 2015), http://fortune.com/kior-vinod-khosla-clean-tech/.

[85] For a further discussion on this issue, see Appendix B at 18-19.

Based on the data discussed in Appendix B, and accounting for the possibility (albeit unlikely) that liquid cellulosic biofuel producers will produce at a higher overall rate in 2017 than in prior years, a proper substitute model would use 10% of the "established" producer group's cumulative capacity. Only a handful of firms have reached production rates above 10% in recent years, and EPA has provided no evidence that these small firms (e.g., Quad County Corn Producers) are representative of the "established" producer group as a whole. Moreover, a model using 10% of the "established" producer group's capacity vastly outperforms the Proposed Rule's 50th percentile model when applied to the data for 2010–2015 shown above. This model would generate an expected production volume from the "established" producer group of 2.9 million gallons in 2017, rather than the projection of 18 million gallons included in the Proposed Rule. *See* 81 Fed. Reg. 34,806.[86]

5. Additional Issues

The Proposed Rule's forecast for liquid cellulosic biofuel also fails on other grounds. *First*, EPA's estimate for liquid cellulosic biofuel (30 million gallons) is out of step with the EIA's estimates for recent years. For example, EPA's estimate for 2016 (23 million gallons) was more than double the estimate set forth by the EIA for 2016 (10 million gallons). While the EIA projection for 2017 is not yet available, given EPA's substantial increase in the volume estimate for 2017, EPA is likely to have an estimate significantly, and unreasonably, higher than EIA's estimate. EPA has consistently departed upwards from EIA's estimates in the past, *see, e.g.,* 77 Fed. Reg. 1,328–29, and in each instance this departure has made EPA's estimate more inaccurate than it would have been had EPA stuck with EIA's estimate.

Second, the CAA requires EPA to obtain the required EIA estimates for cellulosic biofuel production and place it in the docket for this rulemaking. *See* 42 U.S.C. § 7525(o)(7)(D)(i). These estimates are not only mandated by the statute, but they are intrinsic to the calculation of annual percentage standards. It is well settled that "[a]n agency commits serious procedural error when it fails to reveal . . . the technical basis for a proposed rule in time to allow for meaning commentary." *Connecticut Power & Light Co. v. Nuclear Regulatory Comm'n*, 673 F.2d 525, 530-31 (D.C. Cir. 1982); *see also Chamber of Commerce of U.S. v. SEC*, 443 F.3d 890, 901-06 (D.C. Cir. 2006) (vacating a rule on that basis). EPA's failure to obtain and publish the EIA estimates for cellulosic biofuel production renders the cellulosic biofuel volume requirements for 2017 arbitrary and capricious, notwithstanding EPA's statement that is "anticipate[s] considering these estimates . . . for the final rule."[87]

Third, EPA has not provided sufficient transparency on data that form the central basis for EPA's liquid cellulosic biofuel projections. EPA has withheld call notes, production data, and other key materials for liquid cellulosic biofuel producers, claiming that this information is CBI. EPA needs to improve its transparency when establishing the cellulosic biofuel mandate, and, at minimum, provide sufficient information on which the public can provide meaningful comments.

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[86] In the aggregate, the data-driven projection models recommended in this comment forecast actual liquid cellulosic biofuel production of 4.3 million gallons in 2017.

[87] 81 Fed. Reg. 34,803.

6. CNG/LNG Cellulosic Biofuel Production Estimate

Because CNG/LNG biogas will be providing the ov erwhelming majority of cellulosic RINs during 2017, the Agency must provide a much more transparent analysis of its determinations. Much of the significant information underlying that analysis has been designated as Confidential Business Information (CBI). Within such constraints, EPA must, however, support its analysis of the availability of such fuels in order to facilitate the opportunity for public comment. This is especially true because of the much larger population of facilities (at least 37) and the vastly larger volumes expected by EPA for biogas fuels in 2017 (148-217 million gallons), which could result in a sizeable overestimation of actual volumes that will generate RINs. EPA's current analysis of these larger volumes fails the "neutral aim at accuracy" standard that was set forth by the D.C. Circuit.

Furthermore, EPA's projection of CNG/LNG includes several invalid assumptions in the estimation of potential future volumes. Specifically, the Proposed Rule uses a 50th percentile estimate of production for facilities that have not yet generated a cellulosic biofuel RIN. This approach is overly optimistic for the following reasons:

- Not all new facilities are capable of producing transportation -grade biogas. Of the approximately 640 US landfill biogas projects, it is estimated that less than 8% produce a high BTU gas capable of being upgraded into a transportation -grade biogas.[88,89] An even smaller percentage of high BTU projects exist for digester and other biogas projects.

- Facilities produ cing biogas -derived cellulosic fuel need to be located near an existing pipeline to enable movement to areas where biogas-derived cellulosic fuel will be utilized by the transportation fleet. Since most biogas -derived cellulosic fuel is consumed in California, pipeline transportation is required (except for small quantities currently used in local fleet use). It is unreasonable to assume that all facilities not currently generating cellulosic biofuel RINs would be located near a pipeline.

- There are alte rnative uses and competition for biogas -derived cellulosic fuel. State renewable portfolio standards (RPSs) require an increasing amount of renewable electricity. One cost -effective method of meeting the RPS requirements is through the use of biogas to generate electricity. Also, many biogas facilities use at least a portion of the generated biogas to generate local power. Any additional existing capacity would need to be diverted away from these uses.

- Generating cellulosic RINs from RNG requires additi onal recordkeeping and reporting after the RNG is produced to document that it is used as a transportation fuel. This is an additional burden that can be a deterrent from generating additional RINs as the volume

[88] Biogas Opportunities Roadmap, US Department of Agriculture, Aug 2014
[89] EPA Landfill Methane Outreach Program, http://www.epa.gov/lmop/documents/xls/opprjslmopdata.xlsx, Last Available July, 2015

of RNG in the market continues to grow. In other words, growth in RNG volume may not translate directly into proportional growth in RIN generation.

Given these factors, a more appropriate method for estimation of cellulosic -derived biogas RINs is to look at historic proven RIN generation and project cumulative volumes.[90]

* * *

The above discussion underscores the need for EPA to use credible data inputs in its analysis of potential cellulosic biofuel volumes. Instead, EPA continues to rely upon calculations using unsupported assumptions and estimates provided by cellulosic producers to generate production estimates. Indeed, EPA continues to accept production forecasts from cellulosic biofuel manufacturers even though these forecasts have been wrong every year. In a recent example, the Coalition for Renewable Natural Gas estimated that August 2014 to December 2014 Cellulosic Biogas Production would be 69 million equivalent gallons, [91] more than twice the actual production of 32 million equivalent gallons during that period. In this RFS proposa l, EPA is basing its projections on input collected from the Coalition for Renewable Gas.

Data on EPA's EMTS shows 140 million RINs were generated from renewable natural gas in 2015. Through May 2016, EMTS shows about 62 million RINs have been generated this year, roughly equating to an annual average of 150 million RINs. The EPA forecast for 2017 of 284 million RINs is almost double the historic rate over the past 17 months. We continue to recommend that EPA use historical production data when setting the annual cellulosic biofuel standard. Otherwise, the Proposed Rule will fail to "take neutral aim at accuracy."

D. Total Renewable Volume for 2017

Based on the issues raised in the above comments API recommends the Final RFS volumes be based on the following volumetric requirements:

	Billion RINs
Cellulosic Biofuel	0.2
Biomass-based Diesel[92]	3
Advanced Biofuel	3.2
Conventional Renewable	13.92
Total Renewable Fuel	17.12

[90] For a further discussion on this issue, see Appendix B at 19-20.
[91] Presentation by Coalition for Renewable Natural Gas, Waste to Biogas & Clean Fuels Finance & Investment Summit, Santa Clara, CA March, 2015.
[92] 2.0 billion gallons X 1.5 equivalency value. The biomass-based diesel number is based on the 2 billion gallon mandate that EPA has finalized for 2017. That mandate is currently in litigation. Should the court require EPA to lower the biomass-based diesel volume for 2017, the values for biomass based diesel, advanced, and general renewable in this table should all be adjusted accordingly.

III. Biomass-Based Diesel (BBD) Volume for 2018

The RFS specifies a timeframe and requires a rigorous analytical review (six factor analysis discussed later) for increasing the biomass based diesel volume standard; EPA needs to adhere to these requirements. EPA's proposal to set the 2018 BBD volume at 2.1 billion gallons lacks the required comprehensive analysis and could lead to consequences contradictory to the objectives of the RFS.

A. Lead time requirement

CAA section 211(o)(2)(B) specifies the volumes for the categories of total renewable fuel, advanced biofuel, and cellulosic biofuel that must be consumed through calendar year 2022. For biomass-based diesel, however, section 211(o)(2)(B)(i) does not prescribe specific statutory volumes after 2012. Instead, CAA section 211(o)(2)(B)(ii) sets a 1 billion gallon floor and requires EPA to establish the biomass-based diesel volume requirements based on an analysis of six statutory criteria (*i.e.*, environmental impact, energy security, expected production, impact on infrastructure, cost to consumers, and certain other factors such as food prices and rural development). CAA section 211(o)(2)(B)(ii) expressly requires EPA to provide 14-months lead time when establishing such requirements. Specifically, under this provision:

> The Administrator shall promulgate rules establishing the applicable volumes under this clause no later than 14 months before the first year for which such applicable volume will apply.[93]

EPA can comply with the 14 month lead-time requirement by finalizing the proposed rule by October 31, 2016. If it fails to meet that deadline, it cannot increase the biomass-based diesel levels beyond the last year for which it met this deadline, which, as explained below, was the 2013 level of 1.28 billion gallons.

EPA was required to have determined the 2014 biomass-based diesel applicable volume by October 31, 2012, the 2015 volume by October 31, 2013, the 2016 volume by October 31, 2014, and the 2017 volume by October 31, 2015. EPA failed to meet any of these deadlines. Compliance with the statutory lead time requirements for these years now is impossible. EPA also has not undertaken an adequate analysis of the six factors specified in CAA section 211(o)(2)(B)(ii) for 2014-2017, for the same reasons it has failed to conduct an adequate analysis for 2018.

Noncompliance with the statutory schedule and EPA's lack of examination regarding the six statutory factors raise the issue of what level of biomass-based diesel can be required in 2018. In this regard, section 211(o)(2)(B)(ii) is clear: EPA cannot alter its most recent determination for 2013 of 1.28 billion gallons, because this is the highest volume for which obligated parties have had the requisite advance notice and an opportunity to comment on EPA's application of the six statutory criteria.[94] While EPA could potentially meet the timing requirements for 2018, if it

[93] 42 U.S.C. § 7545(o)(2)(B)(ii).

[94] We note that even using the 2013 determination would not explicitly satisfy the requirement of CAA section 211(o)(2)(A)(ii) that the Administrator determine applicable volumes for "calendar

finalized the proposed rule by October 31, 2016, the proposed rule's failure to adequately consider the six factors specified in the CAA would preclude increasing the level beyond the 2013 level of 1.28 billion gallons. Any higher applicable volume for biomass-based diesel (or percentage standard based on this volume) for 2018 would be contrary to the plain language of the statute.[95]

B. Six Factor Analyses

Even if EPA were to meet the deadline, it has not undertaken an adequate analysis of the six factors specified in CAA section 211(o)(2)(B)(ii) for 2018. Consideration of these factors is a statutory prerequisite to revising the applicable volume of biomass-based diesel for years after 2012. When EPA increased the BBD volume to 1.28 billion gallons for 2013, it concluded review of actual implementation, at the time, was of "limited value" because the RFS had a short history. Now, with a longer history of the RFS, EPA is in a better position to conduct a more rigorous analysis.

Although EPA has attempted an an alysis of the six specified factors, EPA's analysis is woefully inadequate and ignores information relevant to implementation and impacts of the RFS. Instead, EPA relies on the approach that the 2018 advanced biofuel volume requirement will determine the level of BBD production and import regardless of where the BBD volume requirement is set. Therefore, before EPA conducts the six factor analysis, EPA's approach marginalizes BBD volume increases and, because EPA continues to rely on final rulemaking from 2010, EPA does not uncover negative impacts of increasing the BBD volume. It should be noted that the RFS RIA in 2010 was based on 1.5 billion gallons of biomass based diesel, a 31% lower volume than the proposed 2018 standard of 2.1 billion gallons.

EPA should, for example consider new studies on biomass-based diesel impacts on air quality, GHGs, water use, fertilizer run-off into the Gulf of Mexico, food prices, as well as energy security (in light of the reliance upon imported fuel). The Agency shou ld also consider land use impacts and whether it is appropriate to continue to exempt domestically-produced crop-based biofuels like soy-based biodiesel (and corn-based ethanol) from EISA's land use restrictions especially given recent information indicating that EPA's assumptions underlying that exemption were incorrect.[96]

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years after the calendar years specified in the tables" since EPA's determination was with respect to the year 2013 only.

[95] For further discussion on the Biomass-Based Diesel Standard for 2018, see Appendix B at 5-7.

[96] EISA requires that renewable fuels be produced from renewable biomass. The law further restricts the definition for crop-based renewable fuels to crops from land that was in agricultural use as of the date of enactment of EISA. However, in the original RFS2 rulemaking, EPA effectively exempted domestic crop-based biofuels from this requirement based on the assumption that there would be no new crop-land created. Recent reports including a University of Wisconsin study (http://m.iopscience.iop.org/1748-9326/10/4/044003/article) and an Associated Press investigation (http://bigstory.ap.org/article/secret-dirty-cost-obamas-green-power-push-1) indicate this was an invalid assumption.

Because it has failed adequately to analyze these factors, EPA may not increase the 2018 levels above the last year for which it properly promulgated a biomass -based diesel standard, whi ch was 2013.

Six factors for EPA to address in increasing biomass-based diesel volume:

1. **Environment:** EISA does not require EPA to rely on initial rule -making for subsequent assessments. In fact, the purpose is to review information that may become available. Science has evolved since EPA's 2010 RIA and additional studies are available on the environmental impacts of biodiesel (GHGs, air quality, etc,) including the 2016 European Commission study referenced earlier. [58] EPA should take into consideration constraints and limitations of other advanced renewable fuels and new environmental information related to biomass -based diesel and compare with findings from 2010, not just rely on 2010 findings.

2. **Energy Security:** The U.S . is less reliant on imported oil now than when EISA was enacted and the RFS has "played only a small part in reducing projected net import dependence"[97] according to the Deputy Administrator of the EIA , who also said reliance on oil imports is "significantly lower" and reductions in net imports are primarily driven by increased domestic petroleum production and reduced petroleum demand. [98]

3. **Expected annual rate of future commercial production of renewable fuels:** To date, corn-ethanol and biomass -based diesel have been the two primary fuels utilized for compliance with the RFS, and based on current state of technology, these two fuels will continue to be the primary fuels utilized for compliance with the RFS. However, both of these fuels face real world constraints as the fuel pool becomes saturated with volumes that are compatible with existing infrastructure (i.e. E10 and B5). This saturation could likely cause barriers that must be overcome by other renewable fuels.

4. **Impacts of renewable fuel on infrastructure:** The RFS has been ineffective in its ability for mandated renewable fuel volumes to effect infrastructure changes. The ethanol blendwall occurs at 10 volume percent and biodiesel blending limits effectively occur at 5 volume percent. EPA has acknowledged real word constraints that exist and are barriers to renewable fuel consumption. In EPA's justification for utilizing its general waiver authority, these real world constraints limit the supply of renewable fuels, including biomass-based diesel.

5. **Impacts of renewable on cost to consumers:** The Deputy Administrator of the EIA testified to congress that "biodiesel is significantly more costly than petroleum -based diesel under recent market conditions. Between August 2015 and January 2016, the

[97] Howard Gruenspecht, Deputy Administrator, Energy Information Administration Before the Committee on Environment and Public Works. February 24, 2016

[98] Howard Gruenspecht Deputy Administrator, Energy Information Administration. Statement before the House of Representatives Committee on Energy and Commerce Subcommittee on Energy and Power, June 22, 2016

difference between the Gulf Coast spot market prices of biodiesel and petroleum -based diesel averaged $1.25 per gallon." [99] EPA's own analysis as part of this rule -making concludes that fuel costs will increase as a result of the RFS. However, the EPA analysis is likely an underestimate of actual costs to the broader economy because EPA only focuses on the wholesale level. By EPA's own approach to inadequate domestic supply in using its waiver authority, this is an insufficient analysis because it does not measure the costs of actual renewable fuel consumption.

6. **Impacts of renewable on other factors (i.e. agricultural commodities, rural economic development):** In the U.S., soybean oil is the single largest feedstock input to biodiesel production. The implications of increasing BBD requirements and impacts on direct land use and soybeans shoul d be considered. For example, adjusted for energy density, soybean based biodiesel energy production (Btu per acre) is less than ¼ of corn based ethanol Btu production. So in terms of land use requirements, the biodiesel volume mandate is relatively larg e when compared to renewable fuel produced from corn starch ethanol.

C. Cost Impacts of Proposed Standards

In EPA's "Illustrative Costs" memo, EPA has conducted a woefully inadequate assessment of the cost impacts of its proposed standards for 2017.

First, EPA presents only three illustrative scenarios, but leaves out an other important scenario. EPA should include the scenario where biodiesel / renewable diesel is used to cover both the advanced and remaining conventional renewable beyond E10 and the de minimus volumes of E10+. EPA should evaluate this scenario based on EMTS data in 2014 and 2015. The ethanol blendwall constraints that exist have resulted in increasing volumes of biodiesel/renewable diesel D6 and D4 RINs and declining D5 RINs.

Secondly, EPA's illustrative cost analysis stops at the point of producing and delivering renewable fuel to the blender, as EPA focuses on the wholesale level. As analyzed, this approach is meaningless and falls short of actually measuring the costs and econ omic impacts of achieving objectives of the RFS. This approach is inconsistent with EPA's justification for using general waiver authority in setting renewable fuel standards for 2014-2016. As EPA[100] discussed in RFS 2014 -2016 final rule making, renewable fuel must be "used to replace or reduce the quantity of fossil fuel" to be part of the supply. Biofuel availability by itself (i.e. at the wholesale level) is not considered as renewable fuel if it is not consumed. EPA's illustrative approach focuses on wholesale level and ignores significant cost factors (i.e. infrastructure, energy density penalty, and other constraints) required for actual consumption of renewable fuels. It is important to take these cost factors and economic impacts into consideratio n because, unless actually consumed, renewable fuels do not achieve objectives of the RFS.

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[99] Howard Gruenspecht, Deputy Administrator, Energy Information Administration Before the Committee on Environment and Public Works. February 24, 2016

[100] Federal Register /Vol. 80, No. 239 /Monday, December 14, 2015 /Rules and Regulations

D. Implications of Biomass -Based Diesel Requirements within Nested Standards.

Because the BBD standard is nested within the advanced and total renewable fuel standar ds (i.e. a sub-mandate), increasing the BBD standard above 1.28 billion gallons has a limited ability to help meet fundamental objectives of the RFS. EPA [101] has previously acknowledged the BBD volumes responded to advanced and / or total renewable fuel requ irements. EPA has previously stated that competition among market participants is good [102]. In increasing BBD volume EPA attempts to strike a balance between supporting BBD volumes and other advanced biofuels. Increasing the BBD sub -mandate, above 1.28 bil lion gallons and within the nested structure is not irrelevant, and EPA should not increase the BBD above 1.28 billion gallons.

The agency's proposal to increase the BBD sub -mandate potentially interferes with market competition. It is not a requirement for EPA, per statutory authority, to encourage production and consumption of any specific biofuel over another biofuel.

BBD pr oduction capacity and capacity utilization within the U.S. have remained relatively stagnant in recent years. According to the Energy Information Administration [103], annual biodiesel production capacity has averaged 2.1 billion gallons between 2011 and 2015. During the same time period, capacity utilization has been in a range of 20.1% to 72.6%. Domestic production of biodiesel reached a peak of nearly 1.4 billion gallons in 2013 and declined to less than 1.3 billion gallons in 2014 and 2015. During this s ame time period, the U.S. switched from being a net exporter to a net importer of biodiesel. EPA's approach of increasing BBD is most likely encouraging imported BBD, which does not necessarily lead "…toward greater energy independence and security…", a stated purpose of EISA.

Increasing the BBD sub -mandate does not change the total ethanol equivalent RIN volume. Although CAA requires EPA to establish the BBD category requirement in advance of the other renewable fuel categories, setting the volumes a nd annual percentage standards should not be conducted in isolation. For 2017, EPA has acknowledged real -world constraints and limitations that exist for distribution, blending and dispensing infrastructure. Simultaneously, EPA is looking to the market t o determine how compliance is achieved through the use of ethanol and non-ethanol fuels. Thus, EPA's biomass-based diesel proposal for 2017 contains inconsistencies and could result in unintended consequences (i.e. economies of scale that may exist with a more flexible standard are potentially undercut by the increased sub-mandate).

E. Feedstock Availability

EPA should not set volumes, either advanced or biomass -based diesel, that could require 2.5 billion gallons of biodiesel for 2018 as suggested by the National Biodiesel Board (NBB). There are inadequate supplies to meet this standard without potentially requiring a drawdown of carry -over RINs or causing disruptions to feedstock supplies.

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[101] Federal Register / Vol. 80, No. 111 / Wednesday, June 10, 2015 / Proposed Rules
[102] Federal Register / Vol. 80, No. 239 / Monday, December 14, 2015 / Rules and Regulations
[103] http://www.eia.gov/biofuels/biodiesel/production/archive/2016/2016_03/biodiesel.cfm

Domestic biodiesel production capacity is too small. Betw een 2011 and 2015, domestic biodiesel production annual capacity has averaged 2.1 billion gallons and monthly production capacity utilization averaged 55%. Even with EPA's implementation of the RFS, the EIA reported that domestic biodiesel production peaked at 1.4 billion gallons in 2013.

Registered biodiesel production is unproven and likely too small. EPA reports in the proposed rule that registered biodiesel production for the RFS is around 2.7 billion gallons . Therefore it would require the industry to run at an average capacity utilization of 93% for a year to generate 2.5 billion gallons. In review of data on EPA's EMTS website, monthly biodiesel RIN generation has never reached 93% capacity utilization for ev en a single month. In recent years, capacity utilization has mostly been within the 60% to 80% range. Over the entire EMTS data base, the highest 12 consecutive month average for capacity utilization is 75%, which is far short of achieving 2.5 billion gallons. EPA points to limiting factors at registered biodiesel production facilities related to idled plants and availability of viable feedstocks.

Feedstock supply disruptions: EPA provides sound reasoning for focusing on soybean oil as a feedstock for biodiesel volume above 1.28 billion gallons. Data published by EIA [104] reports that soybean oil is the single largest feedstock input for biodiesel production and according to USDA[105] data, soybeans are the largest crushed oilseed in the U.S. Producing biod iesel from soybean oil is more land intensive than producing ethanol from corn [106] and potential bushel and acreage implications of increasing biodiesel above 1.28 billion gallons are illustrated in the table below. Compared to recent actual soybean producti on, increasing the biodiesel volume mandate could result in relatively large changes. For example, increasing the biodiesel volume from 1.28 to 2.5 billion gallons could require an additional 820 million bushels of soybeans and up to an additional 18 million acres.

Biomass-based diesel volumes and requirements for soybeans

BBD volume (billion gallons)	gal/bushel	soybean production (billion bushels)	yield (bu/ac)	harvested acres (million)
1.28	1.5	0.85	45	19.0
2.00	1.5	1.33	45	29.6
2.50	1.5	1.67	45	37.0
*2012-2015 average		3.6	45	79.2

*2012-2015 U.S. average U.S. production, yield, and harvested acreage; source: USDA.

Annual soybean crushing capacity in the U.S. is around 1.8 billion bushels per year producing around 20 to 22 billion pounds of soybean oil. The portion of soybean oil being used for biodiesel production (methyl ester) has increased from around 9% in 2005 to 28% in 2015. Food

[104] http://www.eia.gov/biofuels/biodiesel/production/

[105] http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1902

[106] Conversion assumptions for biodiesel (1.5 gallons per bushel and 45 bushels per acre) and corn (2.8 gallons per bushel and 170 bushels per acre).

use is the primary destination for soybean oil in the U.S., as it is the "most predominant source of food oil.[107] Increasing the biodiesel volume mandate would require a larger diversion of soybean oil away from food use and / or U.S. export markets. Research indicates that global vegetable oil markets are well connected and fungible[108]. In the case of Europe, palm oil is the marginal oil that fills any domestic shortfall and contributes to indirect land use change emissions. To the extent that diverted soybean oil creates a gap for food oil and / or reduced U.S. exports, EPA should carefully consider the potential negative impacts of how the gap is filled.

F. Vehicle constraints and consumer preference

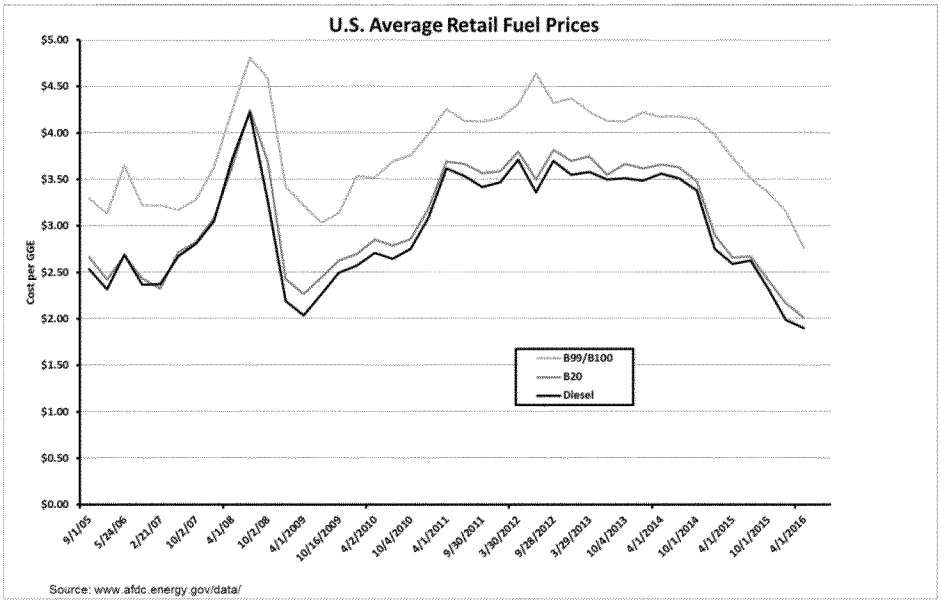
API fundamentally agrees with EPA's assessment of potential limits on the growth of biodiesel and renewable diesel consumption capacity from the perspective of vehicle constraints and consumer preference. As EPA notes in the Preamble of the proposed rule, both the Federal Trade Commission and the ASTM International Specification for diesel fuel (ASTM D975) allow for biodiesel concentrations of up to five volume percent (B5) to be sold as diesel fuel. No separate labeling is required for blends containing up to B5 at the retail pump, so these blends are indistinguishable from petroleum -based diesel to the consumer. While many of the makers of passenger car and light truck diesel models offered for sale in the US warrant their vehicles for operation on B5 o r less, the vast majority of diesel fuel in the US is consumed by heavy duty vehicles and non-road engines. Although a number of heavy -duty diesel engine OEMs have, in recent years, begun to upgrade and warrant their engine models to operate on biodiesel blends containing up to 20 volume percent (B20), it is important to recognize that heavy -duty vehicle and non-road engines have extremely long service lives (~500,000+ miles), and therefore fleet turnover will serve to constrain the overall growth in consu mption of blends containing biodiesel in excess of 5% by volume.

The relative pricing of B20 versus petroleum diesel also may continue to limit consumer acceptance of biodiesel and renewable diesel blends greater than B5. The chart below shows that, on an energy equivalent basis, the price of B99/B100 has historically always been higher than petroleum diesel. Consequently, the price of B20 also has generally been higher than petroleum diesel, albeit less so because of the use of biodiesel as a blendstock.

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[107] http://www.soyconnection.com/newsletters/soy-connection/health-nutrition/articles/Why-Soybean-Oil-Is-Called-Vegetable-Oil

[108] http://www.theicct.org/sites/default/files/publications/ICCT_vegoil_and_EU_biofuel_mandate_20130211.pdf



While the price difference has been small on a percentage basis, it is important to note that the vast majority of the consumers of highway diesel fuel are commercial truck owners/operators for whom fuel costs are a significant component of overall operating costs.

IV. Point of RFS Obligation

API opposes moving the point of RFS obligation. Changing the point of obligation will not fix the blendwall problem or meaningfully impact the overall volume of renewable fuels. A change to the point of RFS obligation will create uncertainty in the RIN market and will complicate the administration and function of the RFS program.

Moving the point of RFS obligation does not alleviate the infrastructure constraints throughout the distribution system. E15 and E85 will still face the current infrastructure hurdles, including retail equipment compatibility. The current RFS structure does not prevent renewable infrastructure investments, and as EPA recognized in the 2014 – 2016 RFS proposal, renewable producers are free to make such investments. Moving the point of obligation also will not address consumer behavior as the significant issue of vehicle compatibility will remain. E15 will continue to face significant hurdles including potential liability, and E85 will still be limited to FFVs. Changing the point of obligation will only shift the compliance responsibility to a different group of RFS participants.

In implementing the RFS, Congress directed EPA to promulgate regulations that "contain compliance provisions applicable to refineries, blenders, distributors, and importers, as appropriate." Based on EPA's consideration of numerous factors, EPA placed the point of RFS obligation where gasoline and diesel are refined or imported. EPA recognized that some obligated parties, including merchant refiners, did not control the downstream blending of ethanol or other biofuels, and would need to have access to RINs. EPA addressed this co ncern by including provisions in the rule allowing obligated parties the unique ability to separate RINs for biofuels, and limited the amount of RINs that can be carried over, in part to make RINs more

accessible in the market. EPA reconsidered the issue following the enactment of EISA, and decided not to change the point of obligation in that rulemaking.

Changing the point of RFS obligation would create uncertainty in the RFS program and in the RIN market. RFS compliance plans, investments and commercia l agreements that were premised on the current structure would be disrupted. Such a major structural change nine years into the program creates uncertainty about other critical components of the program. The incentive for refiners to develop drop-in biofuels would diminish; and these fuels are not limited by the constraints of the ethanol blendwall.

Changing the point of obligation would increase the complexity for EPA to administer and enforce the program, as the number of obligated parties would incr ease. The increased complexity affects the fuel distribution industry as the identification of obligated fuels becomes more difficult. The current RFS structure already includes provisions to facilitate compliance for all obligated parties, including the ability for obligated parties to separate RINs, and a 20% limit on compliance demonstrated with carryover RINs.

As the only trade association representing all facets of the oil and natural gas industry, we urge the EPA to reject efforts by some to move the current point of RFS obligation.

V. Cellulosic Waiver Credits

At the June 9, 2016 public hearing on EPA's proposal, some commentators argued that EPA should restrict the availability of cellulosic waiver credits (CWCs) available to obligated parties. We disagree with this suggestion.

EPA discussed CWCs at length in the RFS2 rulemaking to implement the provisions of EISA. EISA states that whenever EPA reduces the minimum cellulosic mandate volumes specified in EISA, EPA "shall make available for sale cellulosic biofuel credits…." The law further directed EPA to promulgate regulations to implement this provision and states that "[t]he regulations shall limit the number of cellulosic biofuel credits for any calendar year to the minimum applicable volume (as reduced under this subparagraph) of cellulosic biofuel for that year."

EPA explained that they imposed a number of restrictions on the cellulosic biofuel waiver credits to ensure that they are not over utilized at the expense of actual renewable volume:[109]

> We have fashioned a number of limitations on the use o f cellulosic that reflect these considerations. Specifically, the credits will be called ''Cellulosic Biofuel Waiver Credits'' (or ''waiver credits'') so that there is no confusion with RINs or allowances used in the acid rain program. Such waiver credit s will only be available for the current compliance year for which we have waived some portion of the cellulosic biofuel standard, they will only be available to obligated parties, and they will be nontransferable and nonrefundable. Further, obligated part ies may only purchase waiver credits up to the level of their cellulosic biofuel RVO less the number of cellulosic biofuel RINs that they own. A company owning cellulosic biofuel RINs and cellulosic waiver credits may use

[109] 75 Fed. Reg. 14727 (Mar. 26, 2010)

both types of credits if desired to meet their RVOs, but unlike RINs obligated parties will not be able to carry waiver credits over to the next calendar year. Obligated parties may not use waiver credits to meet a prior year deficit obligation. These restrictions help ensure that waiver credits are not over utilized at the expense of actual renewable volume.

In the NPRM, EPA proposed that the credits could be usable for the advanced and total renewable standards similarly to cellulosic biofuel RINs. Several commenters stated this provision could displace advanced and total renewable fuel that was actually produced which would be against the intent of the Act, and that unlike RINs a company should only be permitted to use waiver credits to meet its cellulosic biofuel obligation. We agree, and are limiting the use of waiver credits for compliance with only a company's cellulosic biofuel RVO.

In the course of discussing the CWC issue in the RFS2 rule, EPA explained that the purpose of the CWC provision in EISA was to ensure that there is a "predictable upper limit to the price that cellulosic biofuel producers can charge for a gallon of cellulosic biofuel…." [110] EPA also evaluated potential unintended consequences of this provision and solicited comments on additional restrictions. EPA recognized that additional restrictions, such as those called for by some commenters at the recent public hearing, would be counter to the purpose of the cellulosic waiver provision.

VI. E15 RVP Waiver

Several stakeholders testifying at the June 9, 2016 public hearing implored EPA to extend the 1.0 RVP waiver to E15 blends. API does not support such an extension. Section 211(h)(1) of the CAA restricts the RVP of summer gasoline sold in the United States, and the Act further grants a one pound waiver to E10 blends:

> *For fuel blends containing gasoline and 10 percent denatured anhydrous ethanol, the Reid vapor pressure limitation under this subsection shall be one pound per square inch (psi) greater than the applicable Reid vapor pressure limitations established under paragraph (1).*[111]

EPA considered the RVP waiver issue for ethanol blends in 1989, prior to the 1990 amendments, when EPA set an interim RVP level that was 1 psi higher "for gasoline-ethanol blends commonly known as gasohol."[112] EPA promulgated RVP regulations in 1990 that again granted a 1.0 psi allowance for E10. [113] It revisited the issue again in 1991, when it modified its RVP regulations the following year and clarified that the one pound waiver was limited to ethanol blends between nine and ten percent.[114]

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[110] Id.
[111] 42 U.S.C. § 7545(h)(4).
[112] 54 FR 11868, 11879
[113] 55 FR 23658, 23660
[114] 56 FR 64704, 64708

More recently, in the context of the E15 partial waiver decisions and the Misfueling Mitigation Rule, EPA again reviewed the policies underlying the one pound RVP waiver and determined that it should not be extended to E15. In granting the partial waiver for E15 in 2010, EPA explicitly based its evaporative emissions analysis on the fact that E15 would NOT receive the one pound waiver that E10 does. EPA reached the same conclusion in 2011 when it extended the partial waiver to cover 2001 and newer light duty motor vehicles. [115] In the Federal Register notice for the Misfueling Mitigation Rule, EPA again reviewed the comprehensive history of the one pound waiver and concluded again that it should only apply to fuel blends containing up to ten percent ethanol.

VII. E15 Labeling

API submitted a request in April 2015 for EPA to clarify that E15 is a gasoline, and the retail sale of E15 as flex fuel is prohibited by regulation. We remain concerned that in neglecting to address the issue is resulting in confusion in the marketplace and creating an unlevel playing field for gasoline retailers that abide by the EPA's rules.

As a result of EPA's CAA section 211(f) substantially similar waiver for E15, the fuel is classified as gasoline under EPA's regulations (not sometimes gasoline and sometimes flex-fuel) and is subject to EPA's summer RVP and pump label regulations. Both the EPA regulations and the CAA could not be clearer. As EPA has consistently recognized, E15 does not qualify for the one pound waiver and must meet the summertime RVP requirements to be legally sold. The attempt to label and sell E15 as "flex-fuel" is an unlawful attempt to bypass the existing RVP regulatory requirements. If this labeling is allowed, then theoretically, the same logic could apply to virtually any blend of ethanol and gasoline such as E10.

Some ethanol groups have actively endorsed the practice of relabeling E15 as flex-fuel to circumvent the RVP controls. A recent op-ed in the Des Moines Register clearly states a misinterpretation of the regulations "*every summer when the calendar turns to June, I'm no longer allowed to sell E15 to 2001 and newer vehicles. It can be sold to flex-fuel vehicles only.*"[116] A lack of clarification from EPA is leading not only to misinterpretations from individual station owners, but ethanol trade associations promoting the practice of relabeling E15 pumps in the summer as FFV only. [117] EPA should clarify the regulations and prevent an un-level playing field in the marketplace.

VIII. RIN Carry-over

EPA should adjust renewable fuel volumes downward as needed to ensure that carryover RINs are not intentionally drawn down, but instead remain fully available to meet unforeseen events

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[115] 76 Fed. Reg. 4662, 4663

[116] Good, Charlie. "Summer brings ethanol quirk to Iowa gas stations." June 1, 2016, The Des Moines Register http://www.desmoinesregister.com/story/opinion/columnists/iowa-view/2016/06/01/summer-brings-ethanol-quirk-iowa-gas-stations/85193808/

[117] Lane, Isabel. "E15 blends will be good for the summer, says American Coalition for Ethanol" May 25, 2014, Biofuels Digest.

and facilitate market functionality. EPA has estimated 1.72 billion carryover RINs are available for compliance after 2013 and has not assumed an intentional drawdown through 2017.

In finalizing renewable fuel volume standards for 2013, EPA relied on carry -over RINs for meeting statutory volumes of advanced and total renewable fuels. Subsequent to finalizing volume standards for 2013, EPA did not finalize standards f or years 2014 to 2016 [118] until December 14, 2015. During this time period, EPA proposed standards for 2014, for years 2014 - 2016, and finalized standards for years 2014-2016 that took a different approach in the treatment of carryover RINs. EPA reverted to earlier rulemaking and focused on the important role of carryover RINs: "…to provide flexibility in the face of a variety of circumstances that could limit the availability of RINs. More specifically, carryover RINs provide a mechanism for offsetting the negative effects of fluctuations in either supply of or demand for renewable fuels."[119]

This important function provided by carryover RINs was reaffirmed by EPA in final rulemaking for years 2014 to 2016 where EPA agreed with commenters on RINs providing f lexibility and operability to the RFS program.

To the extent that market conditions and available carryover RINs change, EPA should adjust renewable fuel volumes downward to adhere to their proposed approach for 2017 in that collective carryover RINs not intentionally be drawn down and that renewable fuel volumes are not set at levels that envision a reduction in carryover RINs. While EPA discusses its aim for carryover RIN neutrality in the 2017 proposal (i.e. collective carryover RINs not expected to increase after 2016 nor intentionally drawn down), there are strong indications that EPA's proposed volumes are not achieving the goal of preserving the collective number of carryover RINs. As reported by Oil Price Information Service (OPIS) and Reuters [120], a private firm has predicted that carryover RINs will decline to 1.39 billion at the end of 2016 and further decline to 786 million by the end of 2017. The private firm has attributed this decline in carryover RINs, along with higher and more volatile RIN prices, to EPA's proposed biofuel volumes.

EPA must also account for RINs deemed invalid in setting RFS standards to maintain the total inventory of RIN carryover. A recent report indicates that 60 million fraudulent RINs were generated. [121] The replacement of any fraudulent RINs may result in a drawdown of carry -over RINs in 2017, particularly if EPA finalizes the overly aggressive RFS targets as EPA proposes.

The potential economic harm and market disruptions of setting renewable fuel volumes at levels too high to be absorbed into the market results from an insufficient number of RINs has been analyzed by NERA Economic Consulting. EPA has recognized real world constraints that exist

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[118] 80 Federal Register. No. 239, December 14, 2015.
[119] 78 Federal Register. Nov 230, November 29, 2013.

[120] http://www.reuters.com/article/usa-biofuels-idUSL1N19L14A
[121] http://www.biodieselmagazine.com/articles/1313144/2-florida-men-plead-guilty-to-multistate-biodiesel-fraud-scheme

in limiting the supply of renewable fuels, and thereby the available number of RINs and potential reliance on carryover RINs, for meeting compliance obligations.

A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effects

Dallas Burkholder, Office of Transportation and Air Quality, US EPA
May 14, 2015

Executive Summary

In 2013 the price of renewable identification numbers (RINs) for renewable fuels generated under the Renewable Fuel Standard (RFS) program increased significantly. This document examines available data in an attempt to describe and explain the factors that caused this increase in the price of one variety of renewable fuel (D6) RINs, and the impact this increase in RIN prices may have had on retail fuel prices. We also examine the impact of high RIN prices on merchant refiners (i.e. refiners who do not blend the majority of the petroleum products they produce with renewable fuels), some of whom argue that they are disadvantaged relative to integrated refiners (i.e. refiners who blend a volume of petroleum products with renewable fuels greater than or equal to the volume of petroleum products they produce) by high RIN prices. For the purposes of this document we have primarily considered available data from 2013, and have assumed constant renewable volume obligations (RVOs). This document does not quantify the total cost of the RFS program to consumers or other parties. We acknowledge, however, that the program is likely to have a cost if the cost of renewable fuels is greater than the petroleum based fuels they replace on an energy equivalent basis and if this cost outweighs the overall decrease in the cost of transportation fuel that results from increased fuel supply.[1]

In examining the available data we found that the rise in D6 RIN prices can largely be explained by the increasing total renewable fuel requirement of the RFS program. For the first time in 2013 this standard was established at a level beyond what could be achieved by the blending of ethanol as E10. This meant that the D6 RIN price was largely driven by the marginal cost of blending and marketing ethanol as E85, or the cost of blending other non-ethanol renewable fuels where available, since nearly all gasoline sold in the United States already contained 10 percent ethanol. The demand price for ethanol sold in an E85 blend is significantly less than the demand price for ethanol sold as an E10 blend, as the lower energy density of the fuel, and therefore lower fuel economy of a vehicle operating on E85, are more noticeable in higher level ethanol blends. Alternative fuel choices to E85, such as E10, are also widely available, giving consumers the opportunity to purchase the lowest cost fuel. With the exception of two brief spikes in the price of D6 RINs, which may be the result of the market adjusting to new supply and demand realities,[2] the D6 RIN

[1] Several parties have credited the increased availability of renewable fuels with a decrease in the market price of petroleum derived fuels (relative to a scenario with no renewable fuels) as renewable fuels increase the global supply of transportation fuel. While we acknowledge that increasing available volumes of renewable fuels may have had some effect on global petroleum prices, there is much uncertainty surrounding the magnitude of this impact and quantifying it is beyond the scope of this document.

[2] These price spikes, reported by Oil Price Information Service (OPIS), may overstate the average RIN price as many RINs are purchased through long term contracts or acquired when attached to renewable fuels. The prices reported by OPIS are more reflective of the price for separated RINs in the spot market.

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prices in 2013 generally reflect what would be expected as the demand price for ethanol shifts from a volumetric relationship with gasoline, as was the case for E10, to an energy equivalent relationship with gasoline, as is expected to be the case for E85. We do not find evidence that the price of D6 RINs was driven by scarcity pricing,[3] as some have suggested.

While RIN prices were significantly higher in 2013 than in previous years, we did not see, nor would we expect to see, a corresponding net increase in the overall retail price of transportation fuels across the entire fuel pool. This is because the RIN price, rather than acting as an additional cost, generally acts as a transfer payment between parties that blend renewable fuels and obligated parties who produce or import petroleum-based fuels and are required to obtain RINs for compliance purposes.[4] RINs are generated by renewable fuel producers and sold attached to volumes of renewable fuels to fuel blenders or obligated parties. When the RINs are separated from the renewable fuel and sold independently, the RIN seller may use the revenue received for the RIN to discount the effective cost of the renewable fuel. In order to recover the cost of purchasing RINs, however, obligated parties are expected to increase the selling price of the petroleum products they produce. If fuel prices are fully flexible, markets are perfectly competitive, and we assume no changes to the price of renewable or petroleum based fuels, these two price impacts, the discounting of renewable fuels enabled by the sale of the RINs and the higher petroleum prices that result from the cost of purchasing RINs, are expected to offset each other, resulting in the RIN price having no net impact across the entire fuel pool.

We note, however, that higher RIN prices are expected to have an impact on the retail price of transportation fuels such as E85, E10, and diesel fuel based on their renewable content. In some cases high RIN prices are expected to decrease the retail price of the fuel, while in others they are expected to result in an increase in the retail price of the fuel. High RIN prices are expected to reduce the price of fuel blends that contain a higher percentage of renewable fuels, such as E85 or B20, while increasing the price of fuels that contain little or no renewable fuels.[5] An increase in D6 RIN prices, as seen in 2013, is expected to result in a significant decrease in the price of E85, a very small decrease in the price of E10, and an increase in the price of diesel fuel. This is because the RIN costs of a gallon of fuel (the price increase of the petroleum blendstock due to the RIN obligations) is proportional to the amount of petroleum blendstock contained in a fuel blend, while the RIN value (the effective price reduction of the renewable fuel content enabled by the sale of the RIN) is proportional to the renewable content of the blend. These price impacts are one of the primary ways the RFS program can incentivize the increased blending and consumption of

[3] Scarcity pricing occurs when the price of a good increases significantly due to concerns over a limited supply. In this context we use the term scarcity pricing to refer to a situation where the price of D6 RINs rises significantly beyond what would be expected when considering the price of ethanol and the consumer demand price for ethanol when sold as E85.

[4] In some cases the fuel blender and obligated party may be the same company.

[5] This is expected to be true in a competitive market, however many of these expected price reductions may not be realized for fuels such as E85 that at the current time generally face little competition at the wholesale and retail level. As the availability of these fuels increases we anticipate that a higher proportion of the expected price decrease will be realized by consumers.

renewable fuels in the United States. In blends such as E10, RIN prices are expected to have little overall impact as the RIN cost is approximately equal to the RIN value.

Finally, we examined available data to determine if the expected impacts of high RIN prices could be observed. We were able to observe these impacts in several areas, notably in price differences between petroleum-based fuels with and without RIN obligations and in lower wholesale and retail prices for fuel blends containing higher percentages of renewable fuels. RIN prices are not expected to have a significant impact on the wholesale or retail prices of E10, the most widely used transportation fuel in the United States, as the rise in the market price of the petroleum blendstock due to the RIN cost is offset by the lower effective price of the ethanol portion of the blend enabled by the value of the RIN. The higher market prices for petroleum fuels with RIN obligations relative to those without RIN obligations suggest that obligated parties are generally recovering their RIN costs in the price of the petroleum fuels they produce. Merchant refiners, who largely purchase separated RINs to meet their RFS obligations, should not therefore be disadvantaged by higher RIN prices, as they are recovering these costs in the sale price of their products. Were this not the case, merchant refiners could, and we expect would, avail themselves of other compliance strategies such as contractual arrangements and investing in fuel blending and distribution infrastructure, which are available to merchant refiners looking for alternative methods for meeting their RIN obligations.

Each of these conclusions, and the available data that EPA examined to arrive at these conclusions, is presented in further detail below. While the focus of this document is explaining the rise in RIN prices and resulting fuels marketplace impacts in 2013, we expect a similar set of issues and market forces will be at work in future years.

We note that this document examines available data through June 2014. EPA intends to continue to monitor available data and update the assessments contained in this document as time allows and data becomes available. EPA also welcomes feedback and input on our methodology and conclusions.

Background

On March 26, 2010 EPA published changes to the RFS program regulations, as required by the Energy Independence and Security Act of 2007 (EISA), to ensure that transportation fuel sold in the United States contains volumes of renewable fuel that are either specified in the statute or set by EPA pursuant to specified waiver authorities. The EISA amendments increased the volume of renewable fuel required to be blended into transportation fuel to 36 billion gallons by 2022. As a part of the RFS regulations, EPA implemented a system for tracking the production and use of qualifying renewable fuel using Renewable Identification Numbers or RINs. These RINs are generated by renewable fuel producers or importers and are bought and sold "attached" to the renewable fuel until the fuel is purchased by an "obligated party" (a refiner or importer of gasoline or diesel fuel) or blended with a petroleum-based transportation fuel. At that point the RIN is "separated"

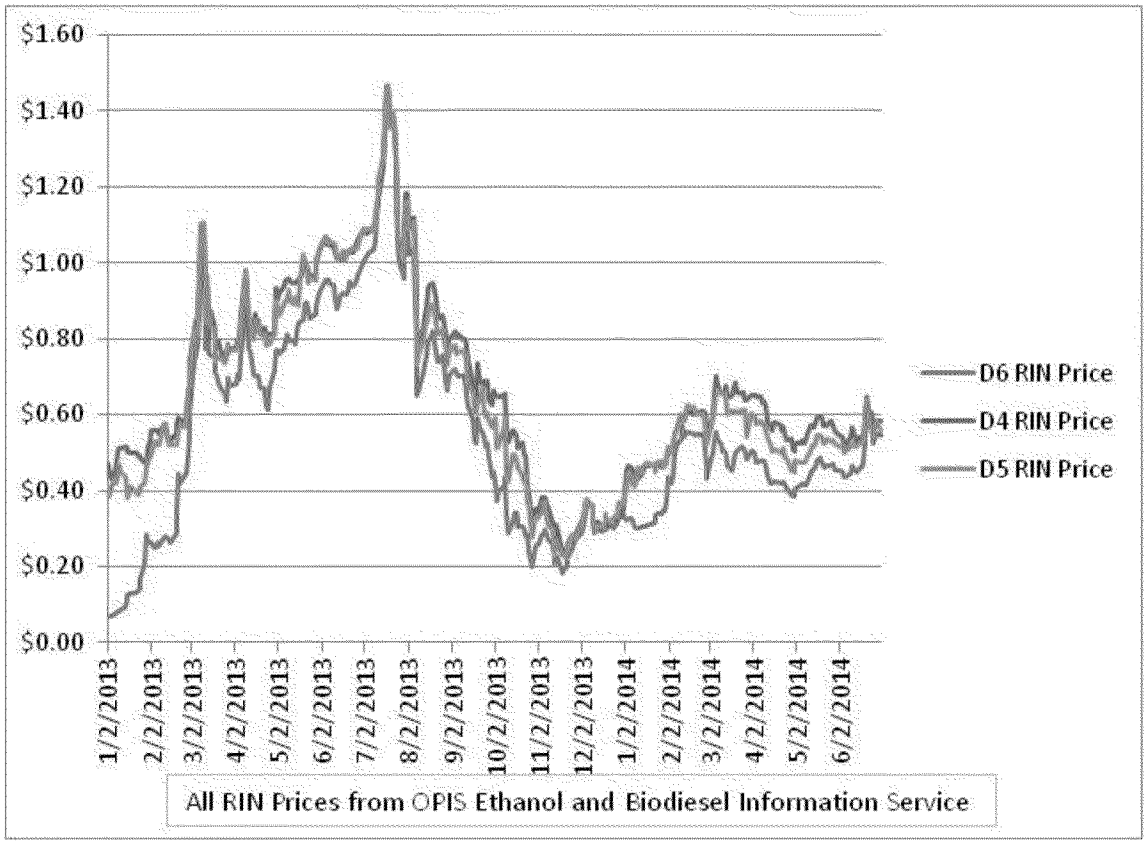
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from the fuel and may thereafter be independently bought or sold until it is retired to meet an obligated party's renewable volume obligation or for some other reason.

By providing an opportunity for obligated parties to fulfill their obligations under the RFS program by purchasing RINs, the RIN market allows obligated parties the flexibility to choose whether or not to be directly involved in the blending of renewable fuels. Obligated parties may choose to acquire RINs by directly blending renewable fuels, by purchasing renewable fuel, separating the RINs, and selling the renewable fuel without RINs, or by purchasing separated RINs on the spot market or through other contractual arrangements. While most RINs are used for compliance in the year they are generated, up to 20% of an obligated party's renewable volume obligation (RVO) may be satisfied with RINs generated in the previous year. This allows excess RINs to function as an inventory in the RIN trading market and provides compliance flexibility to the obligated parties as excess (or "carry over") RINs can act as a buffer for obligated parties to protect themselves against unforeseen changes in the RIN market. Obligated parties may also defer their RFS obligation, in whole or in part, to the following year, provided that the RIN obligation is satisfied together with the party's next year's RVO.

In 2013 the price for Renewable Fuel RINs (D6) increased substantially, from an average of a few cents per RIN in previous years to over $1.00 per RIN in the summer of 2013 (see Figure 1 below). The swift run up in the RIN price led a variety of stakeholders to conduct analyses looking into the causes and impacts of the increase. This document presents EPA's assessment of the cause of the high RIN prices, the expected impacts on retail fuel prices of high RIN payments, and the impact of high RIN prices on obligated parties. Throughout, this document focuses on D6 RINs; references to RIN prices are to D6 RINs unless otherwise noted.

Figure 1
RIN Prices



RIN Market Overview

In attempting to describe and explain the many factors that affect RIN prices or the effect of RIN prices on fuel prices and market participants, it is helpful to begin with a look at the roles different RIN market participants play. RINs are generated by renewable fuel producers.[6] RINs may be generated any time after the fuel is produced but before the fuel leaves the custody of the renewable fuel producer. Each RIN is "attached" to a gallon of renewable fuel and must be sold with that gallon of renewable fuel for which it was generated.

After a gallon of renewable fuel is sold, it is generally blended with a petroleum based fuel to produce a transportation fuel such as E10, E85, or B5. When a gallon of renewable fuel with an attached RIN is purchased by an obligated party[7] or blended to create a

[6] Renewable fuel must be made from "renewable biomass" in accordance with a "pathway" determined by EPA to satisfy lifecycle greenhouse gas reduction requirements (or be grandfathered from such requirements) and be produced for use as transportation fuel, jet fuel or home heating oil. Pathways are a combination of feedstock, finished fuel type, and production process. For a list of currently approved pathways see 40 CFR 80.1426

[7] In the RFS program an obligated party is defined as any refiner that produces gasoline or diesel fuel in the 48 contiguous states or Hawaii, or any importer that imports gasoline or diesel fuel, into the 48 contiguous states or Hawaii

transportation fuel the owner of the fuel may separate the RIN from the renewable fuel. The RIN can then be used by the obligated party to demonstrate compliance with their RFS obligation, or it can be sold to another obligated party seeking RINs to fulfill their renewable volume obligation. Figure 2 presents a basic schematic of the RIN/renewable fuel market.

Figure 2
Product Transfers in the Renewable Fuel and RIN Market[8]

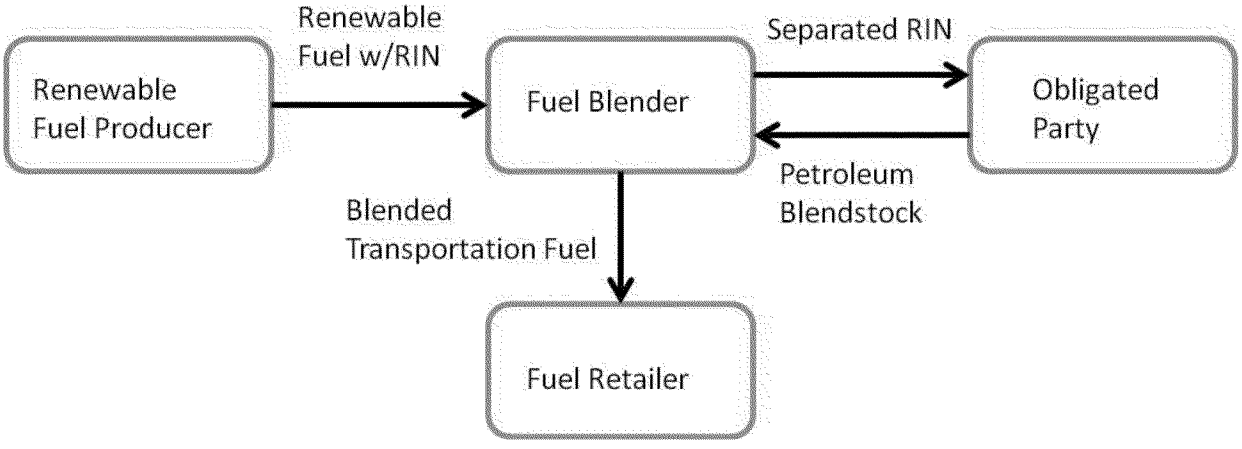


Figure 2 greatly simplifies the reality of a complex marketplace. For example, many obligated parties also own fuel blending operations, and others may purchase renewable fuel with an attached RIN, retain the RIN, and then sell the renewable fuel without the RIN. In practice several parties may take ownership of a renewable fuel before it is blended with a petroleum blendstock to produce a transportation fuel. Similarly separated RINs may be sold to brokers or aggregators before being sold to obligated parties. Where there are additional parties participating in the marketplace not shown in the graphic above, the commodity price received by one of the depicted parties will not be equal to the purchase price paid by the party who ultimately receives the commodity as the intermediate parties will require a fee for their services. We do not expect these fees to be significant, as the RIN and transportation fuel marketplaces are generally competitive.

There are also cases where a single company may be active in multiple areas of the transportation fuel market place. Examples include an ethanol production facility that blends finished transportation fuel, or a refiner who owns fuel blending terminals. In these cases certain transactions may take place within a single company rather than between two companies. The same fundamental transactions, however, still take place, whether they are internal to one company or external and involve different entities.

[8] In the graphics in this document we have depicted the renewable fuel producer, fuel blender, obligated party, and fuel retailer as independent entities. In reality two or more of these functions may be conducted by the same company. Traditionally many obligated parties have also functioned as fuel blenders, and increasingly renewable fuel producers are also producing and marketing renewable fuel blends.

Factors Affecting the RIN Price

EPA designed the RIN program with the intention of providing a market-based compliance mechanism that would cause minimal disruption in the transportation fuel marketplace, while also providing EPA with the necessary assurance that the mandated volumes of renewable fuel would be used in the transportation sector. EPA sought to provide flexibility to refiners, importers, and other producers of petroleum-based transportation fuel by allowing obligated parties to purchase RINs and rely on the existing renewable fuel production, distribution, and blending marketplace rather than requiring each obligated party to directly blend a quantity of renewable fuel equal to their renewable volume obligation. If the RIN market is functioning efficiently the RIN price should be approximately equal to the difference between a renewable fuel's supply price and its demand price (the price the market is willing to pay for the renewable fuel as a transportation fuel). The RIN price provides the incentive the renewable fuel producer needs to continue to produce renewable fuel up to the mandated volume even if the demand price for the fuel would not otherwise cover the cost of production of the renewable fuel.

With this in mind, EPA examined available price data to determine if changes in the supply and demand price for renewable fuels explained the rising and variable D6 RIN prices observed in 2013. Determining a supply price was straightforward: EPA used ethanol[9] price data reported weekly by USDA.[10]

Determining the demand price for ethanol, however, is more complicated. Ethanol, in its unblended form, cannot be used as a transportation fuel by vehicles in the United States. It must be blended with gasoline to produce transportation fuels such as E10 (containing 10% ethanol) or higher level blends such as E85 (containing between 51% and 83% ethanol with a national average ethanol content of 74% as reported by the Energy Information Administration (EIA)).

We posit that the demand price for ethanol in a blended transportation fuel varies significantly depending on the ethanol blend level. The vast majority of ethanol sold as transportation fuel in the United States is sold as E10. When ethanol is sold in an E10 blend we believe that the demand price is approximately equal to the price of the gasoline fuel into which it is blended on a volumetric basis, despite the fact that ethanol contains approximately 33% less energy per gallon than gasoline.

There are several reasons we believe this to be the case. Due to the relatively low level of ethanol in E10 the fuel economy reduction of E10 as compared to E0 (gasoline without ethanol) is fairly small (approximately 3%) and not noticeable by most consumers. Customers therefore generally do not seek price discounts for E10 v. E0. Furthermore, for

[9] Throughout this document all references to ethanol are to denatured ethanol

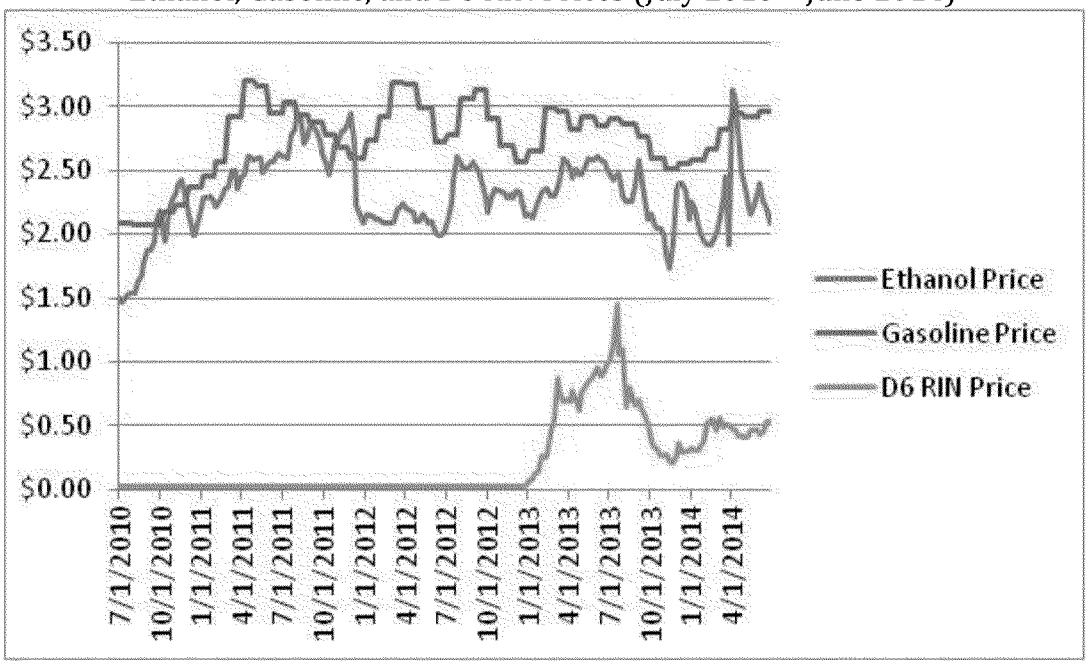
[10] Data recorded by Agricultural Marketing Resource Center. These prices are for ethanol with attached RINs. Accessed online April 10, 2014 <http://www.agmrc.org/renewable_energy/ethanol/midwest-ethanol-cash-prices-basis-data-and-charts-for-selected-states/>

the relatively few consumers who are aware of the slightly lower energy content (and therefore lower fuel economy) of E10 as compared to E0, options to purchase E0 are very limited as virtually all gasoline sold in the United States now contains 10% ethanol. Where E0 is available, it is generally priced at a significant premium relative to E10, thus negating any potential value it may have offered due to its higher energy content. For a further discussion of the pricing of ethanol as E10 see the 2012 Notice of Decision Regarding Requests for a Waiver of the Renewable Fuel Standard.[11]

If the demand price for ethanol as transportation fuel when blended as E10 is approximately equal to the price of gasoline on a volumetric basis, rather than an energy-equivalent basis, we would expect D6 RIN prices to be very low whenever the ethanol price is below the gasoline price. This is because fuel blenders can generate profit by purchasing ethanol for a lower price than gasoline and sell the blended E10 at a price approximately equal to that of the gasoline blendstock on a per gallon basis despite the lower energy content of the fuel. No RIN value is necessary for the blending of ethanol to be profitable under these conditions. This was the case throughout the history of the RFS program until the early months of 2013. As shown in the graph below, from July 2010, the effective date of the updated RFS regulations, through the end of 2012 ethanol was generally priced below gasoline *on a volumetric basis*, and D6 RIN prices were only a few cents, likely attributable to RIN transaction costs. In 2013 the price of ethanol generally remained below the price of gasoline on a volumetric basis, yet the price of D6 RINs increased substantially. We believe a significant factor in this change in RIN price was a saturation of the E10 pool requiring that any additional volumes of ethanol be blended as E85.

[11] FRL-9754-4

Figure 3
Ethanol, Gasoline, and D6 RIN Prices (July 2010 – June 2014)



Note: The ethanol blenders tax credit expired on December 31, 2011, likely resulting in the decline in ethanol price in January 2012. The price spike in March/April 2014 was primarily the result of extremely cold winter temperatures leading to rail congestion[12]

When ethanol is sold as an E85 blend available information suggests that the ethanol has a significantly different consumer demand price. E85 blends contain significantly less energy per gallon than E10 (approximately 22% less energy per gallon assuming E85 contains 74% ethanol). This lower energy content results in a decrease in fuel economy of approximately 22% when owners of flexible fuel vehicles (FFVs) operate their vehicles on E85 rather than E10. Not only is the decrease in fuel economy more noticeable to fuel customers, but the fuel customers also have the ability to choose between purchasing E85 or E10, as E10 is available everywhere that E85 is. For E85 to appeal to most customers, therefore, it would need to be priced in a manner that accounts for the fuel economy penalty, as well as any "inconvenience factor" associated with its lack of availability relative to E10 and the need to refuel more frequently.

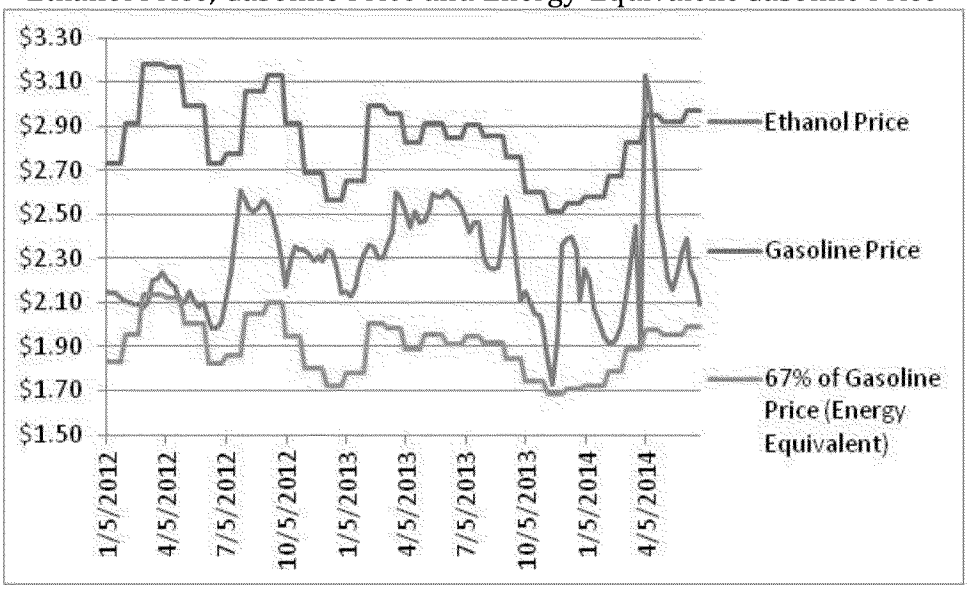
We argue that the more noticeable decrease in fuel economy and the greater availability of alternative fuel choices has a significant impact on consumer decisions regarding purchases of E85. While some FFV owners, primarily motivated by factors other than minimizing fuel costs[13], may purchase E85 at prices above energy parity, the majority of

[12] For further information on this issue see "Rail congestion, cold weather raise ethanol spot prices." *Today in Energy*. U.S. Energy Information Administration, April 3, 2014. Web. September 25, 2014 <http://www.eia.gov/todayinenergy/detail.cfm?id=15691>.

[13] Consumers may purchase E85 when priced above energy parity for reasons such as supporting the rural economy, a desire to buy a domestically sourced fuel, E85's perceived environmental attributes, or government fleet mandates. Alternatively some customers may avoid purchasing E85 even when it is

potential E85 customers will likely only purchase E85 if it is priced at a per gallon discount equal to or greater than the difference in energy content between E85 and E10.[14] If this is the case, the demand price for ethanol as a transportation fuel in an E85 blend is proportional to gasoline on an energy-equivalent, rather than a volumetric basis. This means that we would expect the true demand price for ethanol blended as E85 to be approximately 67% of the price of gasoline.[15] We would further expect that in a competitive market the D6 RIN price would be approximately equal to the difference between the price of ethanol relative to the price of gasoline on a volumetric basis (or near zero if ethanol were cheaper) when ethanol was primarily sold as E10, as it was until the end of 2012, and approximately equal to the difference on an energy-equivalent basis (67% of the price of gasoline) when the E10 market is effectively saturated and additional ethanol must be blended as E85, as it was in 2013. The prices of ethanol, gasoline, and an ethanol-equivalent gallon of gasoline (67% of a gallon) for 2012 and 2013 are shown below (Figure 4), followed by a graph that compares the difference between these prices and the observed D6 RIN price in 2012 and 2013 (Figure 5).

Figure 4
Ethanol Price, Gasoline Price and Energy-Equivalent Gasoline Price

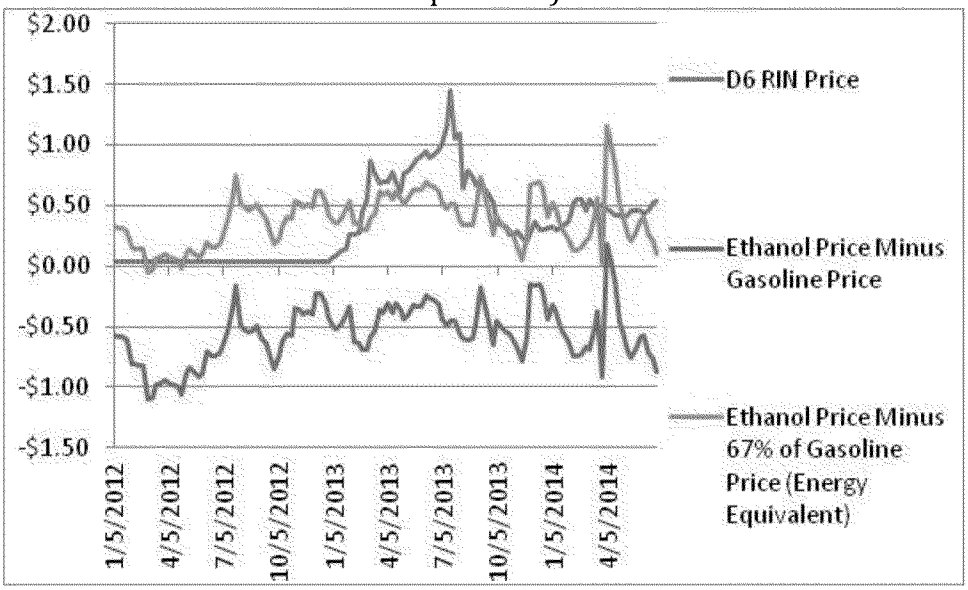


available and priced below energy parity due to concerns about fuel quality, a desire to avoid more frequent refueling, or a lack of knowledge that the fuel is compatible with their vehicle.

[14] Informed customer decisions are often complicated by a lack of information on the precise ethanol content of E85. E85 may contain anywhere from 51% to 83% ethanol. Uncertainty regarding the ethanol content of E85 may hinder a customers ability to effectively choose the lower cost fuel on an energy-equivalent basis.

[15] The energy content of ethanol (77,000 BTU/gallon) is approximately 67% of the energy content of gasoline or E0 (115,000 BTU/gallon).

Figure 5
D6 RIN Price and Difference Between Ethanol and Gasoline Price (Volumetric and Energy-Equivalent)



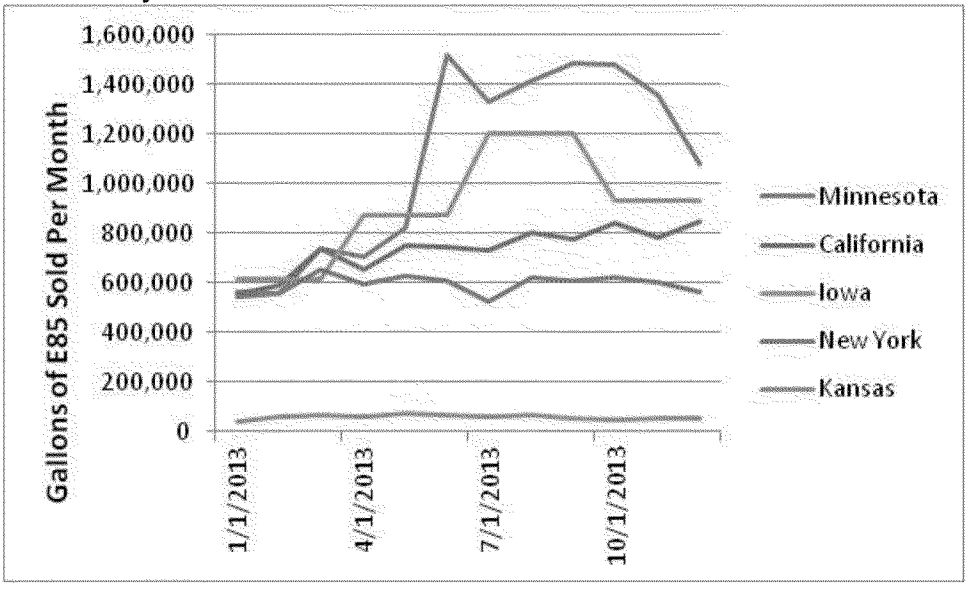
For the first time in 2013, the portion of obligated parties' total renewable volume obligations that could be satisfied with D6 RINs (the total volume obligation for non-advanced biofuels) exceeded the quantity of RINs that could be obtained by blending ethanol with gasoline to create E10. Because the amount of ethanol that could be blended as E10 was effectively capped, obligated parties looked to alternative sources of RINs, such as increased blending of ethanol as E85, the blending of additional non-ethanol biofuels, or the use of carry over RINs (RINs generated in 2012 available to satisfy 2013 obligations). In the ethanol market, we argue that the customer demand price shifted from a price based in part on gasoline on a volumetric basis (as it had been when increased blending of ethanol as E10 had represented the marginal gallon of ethanol), to one based in part on gasoline on an energy-equivalent basis, as increased ethanol blending of ethanol as E85 now represented the marginal gallon of ethanol. Figure 5 illustrates this shift. Throughout the vast majority of the time from January 2012 through June 2014 ethanol was cheaper than gasoline on a volumetric basis. Prior to reaching the E10 blendwall in 2013 the demand price for ethanol was primarily based on that of gasoline on a volumetric basis and D6 RINs were only a few cents, effectively representing transaction costs. After reaching the blendwall the demand price for ethanol shifts to being based primarily on the price of gasoline on an energy-equivalent basis. Because ethanol was more expensive than gasoline on an energy-equivalent basis from January 2013 through June 2014 the D6 RIN prices help offset the difference between the supply price of ethanol and the new demand price when the marginal gallon of ethanol is sold as E85.

This higher D6 RIN value also provided an increased opportunity for the increased blending of non-ethanol fuels, which may not have been profitable to blend into transportation fuel with low D6 RIN prices. In each of these cases, increased blending of ethanol as E85 and increased use of non-ethanol biofuels, the supply price exceeded the

demand price for these renewable fuels when used as a transportation fuel. As a result, RIN prices increased in 2013 as shown in Figure 1. The increasing D6 RIN price provided an incentive not only for increased blending of ethanol as E85, but also for the increased production and import of non-ethanol fuels such as biodiesel and for a draw-down in the bank of carry over RINs.

During the period of high RIN prices in the middle of 2013 some parts of the United States saw growth in E85 sales. This growth was most notable in states, such as Minnesota and Iowa, where the RIN value was most likely to be passed on to the consumer due to competition at both the wholesale and retail level in the E85 market.[16] However, consumption of E85 remained limited despite the high RIN prices due to a variety of factors including a lack of infrastructure for the blending, sale, and consumption of E85, and the lack of competitive markets leading to limited RIN value pass through to consumers in many markets.

Figure 6
Monthly E85 Sales in 2013 for States with Available Information



High D6 RIN prices had an even more significant impact on the production and consumption of non-ethanol biofuels such as biodiesel and renewable diesel, which did not face the same infrastructure challenges as ethanol blended as E85. Generation of D6 RINs for biodiesel and renewable diesel increased from approximately 6 million and 1 million in 2011 and 2012 respectively to over 250 million in 2013.[17] Generation of D4 (biomass-based diesel) RINs were also at the highest levels achieved under the RFS program. The increased availability of these fuels, combined with the availability of carry over RINs from excess production in 2012 helped to moderate the price of D6 RINs in 2013 despite the

[16] According to data from DOE's Alternative Fuels Data Center approximately 20% of all E85 stations in the United States in 2013 were located in Minnesota or Iowa
[17] All RIN production numbers from EMTS

limited ability of RIN prices or volume mandates to increase the consumption of ethanol as E85.

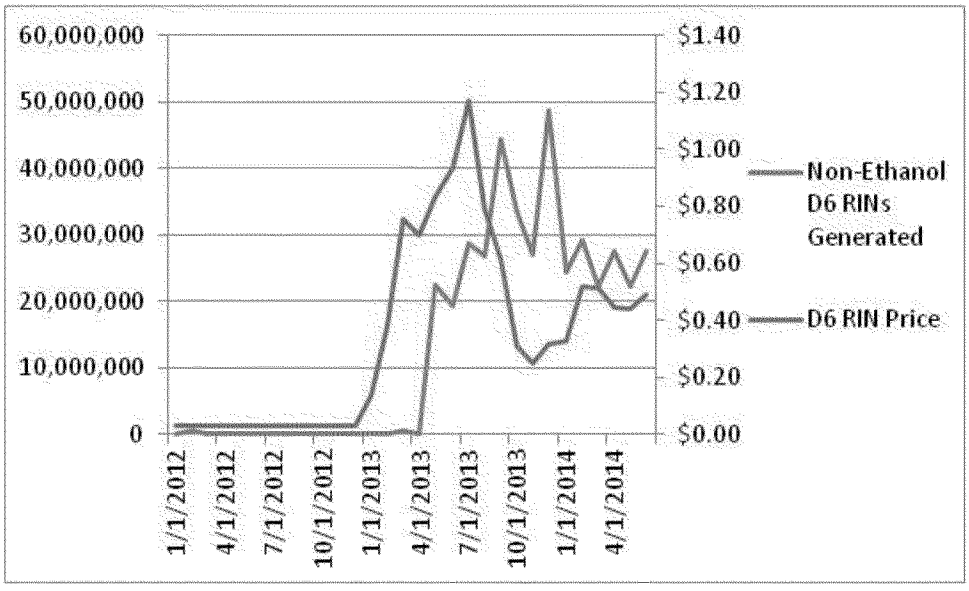
On the basis of the data available to EPA, we believe much of the increase in 2013 D6 RIN can be explained by the arrival of the E10 blendwall in 2013 and the resulting change in demand price for ethanol. These factors alone, however, do not provide a complete explanation of the observed D6 RIN prices. As shown in Figure 5, from May 2013 through August 2013, spot D6 RIN prices were substantially higher than would have been expected based solely on the prices of ethanol and gasoline. This may have been due to a variety of factors, including: limited blending and retail infrastructure for E85, limited ability for RIN prices to affect the retail price of E85, the RIN price needed to incentivize increasing the production or import of non-ethanol fuels, and uncertainty about the final RFS standards for 2013 and 2014. It may also be the case that the reported prices for D6 RINs reflect the price of a relatively small number of RINs traded on the spot market rather than the D6 RINs purchased through long term contracts and are therefore more volatile and not necessarily reflective of the average D6 RIN price. Regardless, these elevated D6 RIN prices increased the incentive for the production, import, and consumption of non-ethanol fuels, notably biodiesel produced from grandfathered facilities,[18] which were eligible to generate D6 RINs and could now compete in the domestic fuels market as a result of their significantly increased RIN value. In other words, renewable fuels that were uneconomic to produce or import to satisfy the D6 RIN obligations when RIN prices were only a few cents became economic to produce or import with substantially increased D6 RIN prices.

It is highly speculative and difficult to predict the future price of D6 RINs, as they are influenced by multiple factors, including the supply and demand prices for ethanol, the price of petroleum, the cost of production of non-ethanol renewable fuels, consumer behavior in the E85 market, and availability of alternative compliance mechanisms. However, given the fact that the required total renewable fuel volume will likely exceed the volume of ethanol that can be blended as E10 in the future, we would not expect D6 RIN prices to return to the prices seen from 2010 to 2012.[19]

[18] Grandfathered facilities are those that commenced construction on or before December 17, 2007, or any ethanol plant fired by natural gas, biomass, or a combination thereof that commenced construction before December 31, 2009. These facilities are exempt from the 20% GHG reduction requirement for the generation of D6 RINs, however they still must use a feedstock that meets the renewable biomass definition, be intended for use as transportation fuel or other qualifying uses, and meet all other reporting and recordkeeping requirements.

[19] RIN prices could return to historic low levels of a few cents if the price of ethanol or other renewable fuels fell sufficiently below the cost of gasoline on an energy equivalent basis

Figure 7
Generation of Non-Ethanol D6 RINs and D6 RIN Price



*RIN Prices from OPIS Ethanol and Biodiesel Information Services

RIN Price Impact on Transportation Fuel Prices

The high RIN prices observed in 2013 prompted questions not only regarding the cause of the increase, but also about the impact the RIN prices would have on the retail price of transportation fuel. Some have suggested that higher RIN prices necessarily lead to higher retail prices for all transportation fuels.[20] Our analysis, however, indicates that this is not likely to be the case. In short, this is due to the fact that, rather than being an additional cost, RINs can be viewed as transfer payments from obligated parties to renewable fuel blenders to incentivize the blending of renewable fuels and the sale of fuel blends with higher renewable content. These payments, while having no net impact on the overall cost of transportation fuel, can reduce the price of fuels with high renewable content, such as E85, at the expense of fuels such as diesel that generally contain a small percentage of renewable fuel. This can ultimately increase the demand for renewable fuels by giving the fuel blenders a greater incentive to increase the renewable content of the fuel blends they sell.

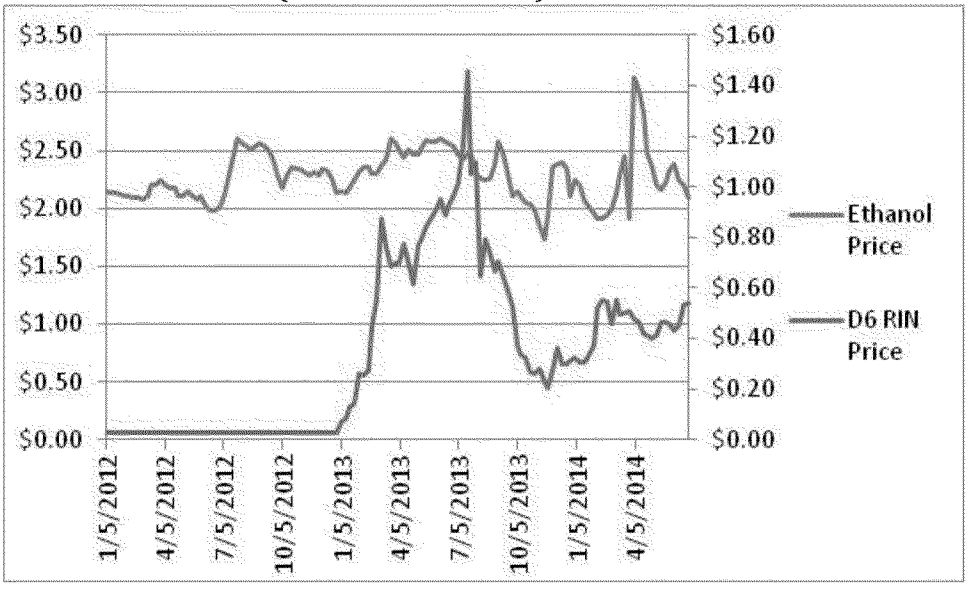
If the cost of producing ethanol and gasoline blendstocks (or biodiesel and diesel fuel) remains unchanged, then the overall cost of the blended fuels should not be impacted by RIN prices.[21] This does not mean that there is no cost to increasing the volume of renewable fuels required to be blended into the transportation fuel pool. If renewable fuels cost more on an energy-equivalent basis than the petroleum fuels they displace there is a

[20] For example see "Gasoline Price Inflated by Ethanol in Oil Boom: Energy Markets" by Mario Parker, published by Bloomberg on March 21, 2013. Available online < http://www.bloomberg.com/news/2013-03-21/gasoline-price-inflated-by-ethanol-in-oil-boom-energy-markets.html>

[21] As stated in the previous paragraph, however, varying RIN prices are expected to impact the relative prices of different fuel types such as E85, E10, E0, B20, B5, etc.

cost to using these renewable fuels; and the higher the required volume of these fuels, the higher the cost will be. As can be seen in examining the available data, however, the sharp rise in D6 RIN prices did not have a measurable impact on the prices of ethanol with attached RINs (see Figure 8). Renewable fuel blenders acquire RINs by purchasing renewable fuels with attached RINs.[22] They sell these RINs to obligated parties, who look to recover the cost of these RINs in the price of the blendstocks they sell to the fuel blenders. Higher blendstock prices are in turn offset by the RIN value captured by blenders when they blend renewable fuels. We expect that higher RIN prices may increase the magnitude of these payments between obligated parties and renewable fuel blenders, as well as the relative pricing of fuel blends containing higher volumes of renewable fuels versus those containing little or no renewable fuel (see Figures 9 and 10 below), but that the net impact of these transfers on the cost of transportation fuel would be minimal.

Figure 8
Ethanol (with attached RIN) and D6 RIN Prices



To illustrate this we examined the expected price of fuel supplied to the retailer for both E10 and E85. We did this first assuming a relatively low average RIN price and then again using the average RIN prices in 2013. The prices used for this example are shown in Table 1 below. The RIN obligation percentages are based on the 2013 volume requirements and standards. We note that because the standards are nested, the D6 RIN obligation percentage is equal to the total renewable fuel percentage standard minus the advanced biofuel percentage standard. Similarly, the D5 RIN obligation percentage is equal to the advanced biofuel percentage standard minus the biomass-based diesel percentage standard. For this example we have ignored the very small cellulosic biofuel requirement.

[22] As noted previously, renewable fuels with attached RINs can be purchased directly by obligated parties, and many obligated parties also blend renewable fuels to produce transportation fuel.

The total RIN cost is calculated by summing the product of the RIN obligation percentages by the corresponding RIN price for each of the RIN types.[23] The structure of the RFS program is such that every gallon of gasoline or diesel fuel produced or imported in the United States has an equal RIN obligation, including cellulosic, biomass-based diesel, advanced, and total renewable RINs. This means that the RIN cost for a gallon of gasoline is impacted by the price of the biomass-based diesel RIN, even though biodiesel cannot be blended into gasoline. Our examples reflect this structure, with identical RIN costs for gasoline and diesel that vary with different RIN prices. For these examples we have ignored transportation, overhead, and profit-taking[24] to simplify our analysis. While these are all factors that will impact the cost paid by retailers for blended fuels, we would not expect them to vary with RIN prices and have therefore not explicitly considered them in our example.

Table 1
Illustrative Commodity Prices for Exploring RIN Price Impacts on Retail Fuel Prices

	Low RIN Prices	High RIN Prices (2013 Average for RIN Prices)
Ethanol (with attached RIN)[25]	$2.25/gallon	$2.25/gallon
Gasoline blendstock (without RIN costs)	$2.75/gallon	$2.75/gallon
Biodiesel (with attached RIN)	$4.00/gallon	$4.00/gallon
Diesel blendstock (without RIN costs)	$3.25/gallon	$3.25/gallon
D6 RIN Price	$0.05	$0.60
D4 RIN Price	$0.50	$0.73
D5 RIN Price	$0.25	$0.71
D6 RIN Obligation	8.12%	8.12%
D4 RIN Obligation	1.13%	1.13%
D5 RIN Obligation	0.49%	0.49%
Total RIN Cost per gallon(All RIN obligations)	$0.01	$0.06

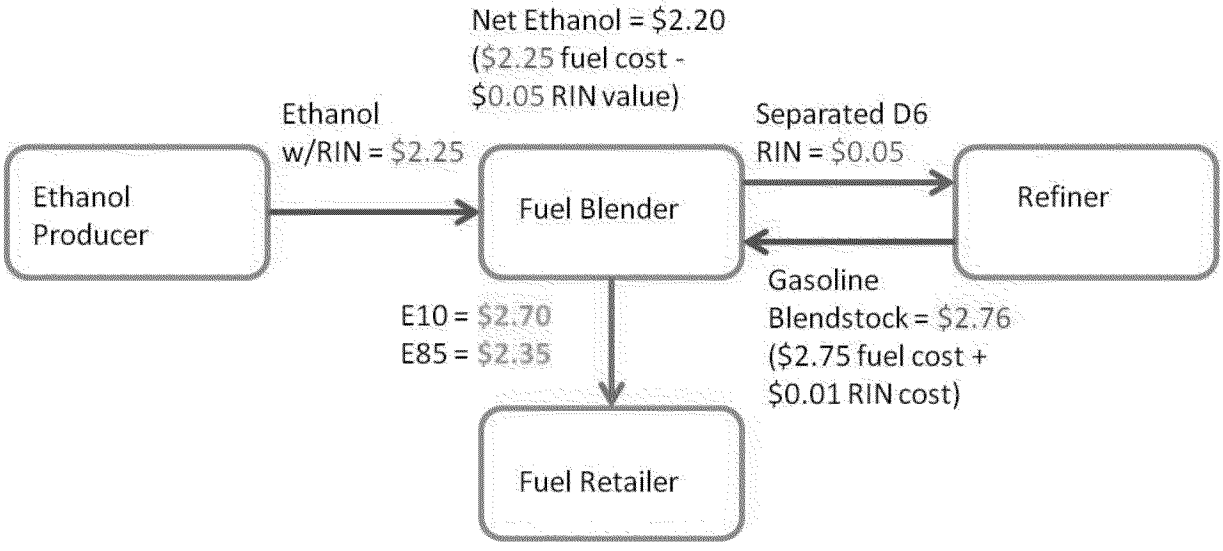
Using these assumptions for commodity prices, and based on our schematic of the RIN and fuel market shown in Figure 2 above, we can follow each of the fuel types through the RIN and fuel market to estimate the impacts on the price paid by retailers for both E10 and E85.

For the low RIN price scenario, we begin with the purchase of ethanol by the fuel blender from the renewable fuel producer. In this transaction the fuel blender receives one gallon

[23] Per Gallon RIN Cost = D6 RIN Obligation * D6 RIN Price + D5 RIN Obligation * D5 RIN Price + D4 RIN Obligation * D4 RIN Price. This is the RFS "compliance cost" for each gallon of gasoline and diesel produced or imported by an obligated party.
[24] EPA has examined some data that suggests increased profit taking during times of high RIN prices in the E85 market, but believe this will decrease as competition in the E85 marketplace increases.
[25] As shown in Figure 8, data from 2013 strongly suggests that the price of ethanol with an attached RIN is not a function of the RIN price

of ethanol and the corresponding D6 RIN from an ethanol fuel producer for $2.25. After receiving the ethanol from the ethanol producer the fuel blender separates the D6 RIN and sells it to an obligated party for $0.05. The net purchase price for the ethanol without the RIN is therefore $2.20. The fuel blender next purchases gasoline blendstock from a refiner. The price the refiner would charge for one gallon of gasoline blendstock in the absence of the RFS program in this example is assumed to be $2.75 per gallon. Anticipating the need to purchase RINs to satisfy the RIN obligation associated with selling the gallon of gasoline blendstock, the refiner instead charges the fuel blender $2.76 per gallon ($2.75 for the cost of the gasoline blendstock and $0.01 to cover the per gallon cost of the RIN obligations). The fuel blender has effectively paid $2.20 per gallon of ethanol ($2.25 per gallon with attached RIN - $0.05 cost recovered in the sale of the RIN) and $2.76 per gallon of gasoline blendstock ($2.75 for the blendstock + $0.01 RIN recovery cost). The cost of producing blended fuels can be calculated by taking the average of these two fuel component costs weighted by the proportion of each component in the finished fuel blend.[26] The resulting blended fuel costs are $2.70 per gallon for E10 and $2.35 per gallon of E85. The prices and flows of the various commodities are shown in Figure 9 below.

Figure 9
Impact of Low RIN Prices on the Cost of Gasoline to Retailers

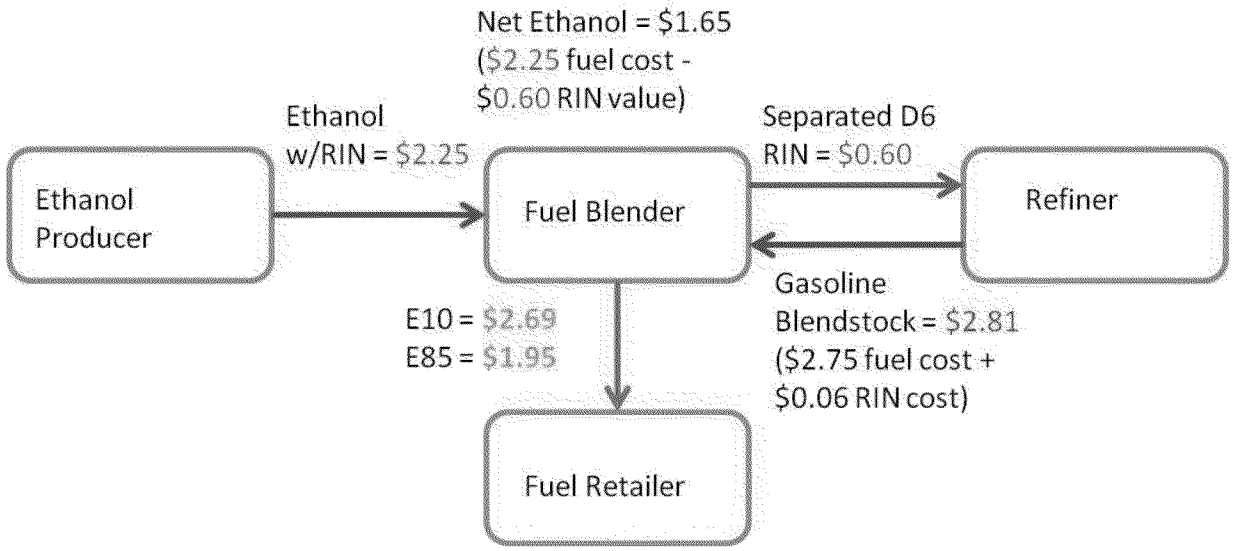


A similar scenario can be examined with high RIN prices, such as those observed in 2013. For this scenario, we begin in the same place, with the purchase of ethanol by the fuel blender from the renewable fuel producer. As in the previous scenario, the fuel blender receives one gallon of ethanol and the corresponding D6 RIN from an ethanol fuel producer for $2.25. In this case, however, after being separated from the gallon of ethanol the RIN is sold to an obligated party for $0.60. The net purchase price for the ethanol without the RIN is therefore $1.65 rather than $2.20 in the previous scenario. In response to the higher RIN

[26] For this example we have assumed E10 contains 10% ethanol and 90% gasoline blendstock and E85 contains 74% ethanol and 26% gasoline blendstock. The equations to calculate the cost are therefore E10 = 0.1*[net ethanol cost] + 0.9*[net gasoline blendstock cost] and E85 = 0.74*[net ethanol cost] + 0.26*[net gasoline blendstock cost].

prices, the refiner must charge more for each gallon of gasoline blendstock sold to cover the cost of purchasing RINs to fulfill their RVO. The refiner now charges the fuel blender $2.81 per gallon of gasoline blendstock ($2.75 for the cost of the gasoline blendstock and $0.06 to cover the cost of the RIN obligations). In this high RIN price scenario, the fuel blender has effectively paid $1.65 per gallon of ethanol ($2.25 per gallon with attached RIN - $0.60 cost recovered in the sale of the RIN) and $2.81 per gallon of gasoline blendstock ($2.75 for the blendstock + $0.06 RIN recovery cost). The resulting blended fuel costs are $2.69 per gallon for E10 and $1.95 per gallon of E85. The prices and flows of the various commodities are shown in Figure 10 below.

Figure 10
Impact of High RIN Prices on the Cost of Gasoline to Retailers

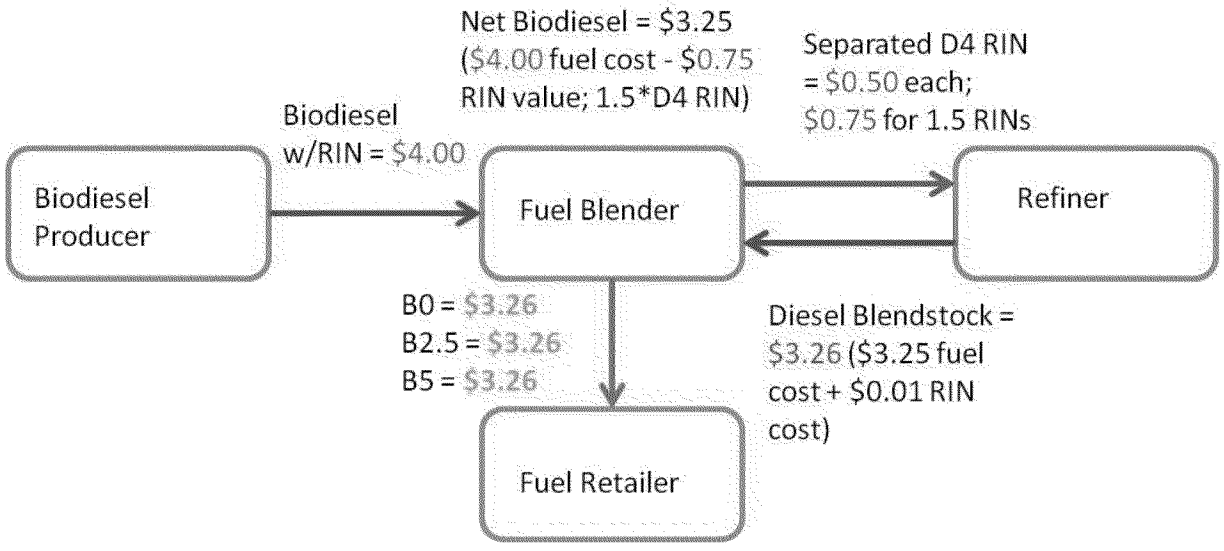


As these two scenarios demonstrate, rising RIN prices alone are not expected to increase the price of transportation fuel to retail station owners, however they have a significant impact on the relative prices of fuels with a relatively high renewable content (E85) as compared to those with a relatively low renewable content (E10). As the cost of acquiring RINs rises, refiners and other obligated parties are expected to respond to this cost by increasing the price of the gasoline blendstock they are selling to recover their increasing RIN costs. While this does increase the market price for the gasoline blendstock, this increase is generally offset by the lower net price paid for the ethanol with which the gasoline blendstock is blended.

The same market dynamics are at work in the diesel fuel marketplace. When considering the impact of RIN prices on cost of fuel to the retailer, we begin with the purchase of biodiesel by the fuel blender from the renewable fuel producer. The fuel blender receives one gallon of biodiesel and 1.5 D4 RINs from a biodiesel producer for $4.00. Each gallon of biodiesel generates 1.5 RINs due to the higher energy content of biodiesel relative to ethanol. After being separated from the gallon of biodiesel, the RINs are sold to an obligated party for $0.50 each (the blender receives the total RIN value associated with a gallon of biodiesel; $0.75 in the low RIN price scenario). The net purchase price for the

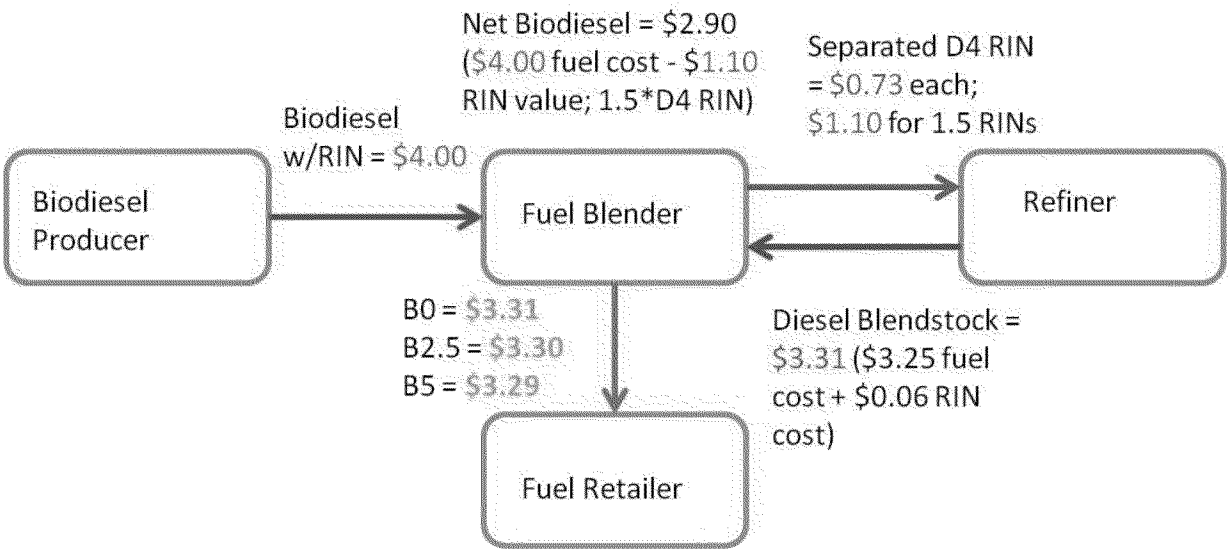
biodiesel without the RIN is therefore $3.25. For the purposes of this example we are not considering the impact of any blenders tax credit on the cost of biodiesel blends to retail stations. To cover the anticipated cost of their RIN obligation, the refiner charges the fuel blender $3.26 per gallon of diesel blendstock ($3.25 for the cost of the diesel blendstock and $0.01 to cover the cost of the RIN obligations). In this scenario, the fuel blender has effectively paid $3.25 per gallon of biodiesel ($4.00 per gallon with attached RIN - $0.75 cost recovered in the sale of the RINs) and $3.26 per gallon of diesel blendstock ($3.25 for the blendstock + $0.01 RIN recovery cost). The resulting blended fuel costs are an identical $3.26 per gallon for B0, B5 and B2.5 (the average blend rate if every gallon of diesel fuel sold contained biodiesel). The prices and flows of the various commodities are shown in Figure 11 below.

Figure 11
Impact of Low RIN Prices on the Cost of Diesel to Retailers



For the high RIN price scenario, the cost of the biodiesel with attached RINs to the fuel blender is the same $4.00 per gallon. The net purchase price for the biodiesel without the RINs is now reduced to $2.90 per gallon ($4.00 per gallon of biodiesel – 1.5 RINs * $0.73 per RIN). In response to the higher RIN prices, the refiner must charge an additional $0.06 for each gallon of diesel blendstock sold, resulting in a per gallon price of $3.31 per gallon for diesel blendstock. In this high RIN price scenario, the fuel blender has effectively paid $2.90 per gallon of biodiesel ($4.00 per gallon with attached RIN - $1.10 cost recovered in the sale of the RINs) and $3.31 per gallon of diesel blendstock ($3.25 for the blendstock + $0.06 RIN recovery cost). The resulting blended fuel costs are $3.31 per gallon for B0, $3.30 per gallon of B2.5, and $3.29 per gallon of B5. The prices and flows of the various commodities are shown in Figure 12 below.

Figure 12
Impact of High RIN Prices on the Cost of Diesel to Retailers



When comparing the impact of high versus low RIN prices on the cost of gasoline and diesel fuel blends to retailers we note two key differences. The first is that the price of gasoline and ethanol fuel blends are much more sensitive to high RIN prices than the price of diesel and biodiesel fuel blends (see Table 2 below). This is due to the fact that the renewable content of gasoline is generally much higher than for diesel fuel (almost all gasoline sold in the United States contains 10% ethanol, with limited availability of blends containing up to 85% ethanol; biodiesel is generally sold at blends containing 5% biodiesel or less, with few blends offered that contain more than 20% biodiesel).

Table 2
Impact of High RIN Prices on Retail Fuel Prices

	No RIN Price (No RFS)	Low RIN Prices	High RIN Prices
E0	$2.75	$2.76	$2.81
E10	$2.70	$2.70	$2.69
E85	$2.38	$2.35	$1.95
B0	$3.25	$3.26	$3.31
B2.5	$3.27	$3.26	$3.30
B5	$3.29	$3.26	$3.29

The second difference that can be observed is that increasing D6 RIN prices are expected to cause a slight decrease in gasoline prices and an increase in diesel prices. In the example above, which is designed to be reflective of a perfectly competitive market, any cost decreases that result from lower prices of gasoline-ethanol blends are offset by cost increases resulting from higher diesel fuel prices. The per gallon pricing changes for diesel

fuel are high relative to the pricing changes in E10 and low relative to the pricing changes in E85 primarily due to the relative renewable fuel content of these three fuel blends.

While not shown in the examples above, increasing D4 RIN price while holding the D6 RIN price constant would be expected to result in a slight increase in blended gasoline prices and a decrease in diesel prices. This is a result of the structure of the RFS program. Both gasoline and diesel blendstocks are subject to the same renewable volume obligations, and therefore the same costs associated with acquiring the necessary RINs. As shown in Table 1, this cost is $0.01 per gallon under the low D6 RIN price scenario and $0.06 per gallon under the high D6 RIN price scenario. In the scenarios presented above, the high D6 RIN prices can be used to reduce the net purchase price of fuels that generate D6 RINs, which in the majority of cases is corn ethanol. Gasoline-ethanol blends, such as E10 and E85, benefit from the lower net ethanol costs enabled by the higher D6 RIN prices, while diesel and biodiesel blends do not benefit as ethanol cannot be added to these fuels. The reverse scenario would also be true. If D4 RIN prices increased while D6 RIN prices were relatively unchanged the RIN cost for producing petroleum-based gasoline and diesel blendstocks would increase by the same amount. This would be expected to decrease the price of biodiesel blends (as the D4 RIN price reduced the net price of biodiesel) and cause slight increases in the price of gasoline-ethanol blends (which cannot be blended with biodiesel and therefore experience only a RIN cost). The magnitude of this impact, however, would likely be smaller as the D4 RVO is significantly lower than the D6 RVO.

Finally, we note that the price for unblended gasoline and diesel fuel increases in both the high and low RIN price scenarios as compared to a scenario where there are no RIN prices (no RFS). For E10, the most common fuel type sold for use in gasoline vehicles, this cost increase is offset by the effective cost reduction in the price of ethanol, resulting in little or no net change to the price of E10. For diesel-biodiesel fuel blends, however, this is not the case. The lowest price diesel fuel across the three scenarios is for unblended diesel in the no RIN price case. While it is true that in low and high RIN cases biodiesel blends are the same price as, or cheaper than unblended diesel fuel all of these products are more expensive than unblended diesel in the scenario where there is no RIN price.

Observing RIN Price Impacts in the Marketplace

After considering these simplified examples of how increasing RIN prices might impact the price of blended fuel to retailers, EPA examined available price information to determine if the expected price impacts (higher costs for petroleum blendstocks and lower net costs for renewable fuels) could be observed in the data. Due to the many independent factors that impact the cost of transportation fuels, this is not a straight-forward exercise. For example, it is not enough simply to observe the retail price of transportation fuel as the RIN prices fluctuate. If changes in RIN prices corresponded with changes in the price of crude oil (the primary cost of producing gasoline blendstocks), simply observing the relationship between RIN prices and retail fuel prices may give the false impression that increasing RIN prices have a direct impact on the retail pricing of blended fuels. Conversely, decreasing crude oil prices might mask the impact that changing RIN prices have on the price of gasoline blendstocks at the wholesale level or the retail price of blended fuels.

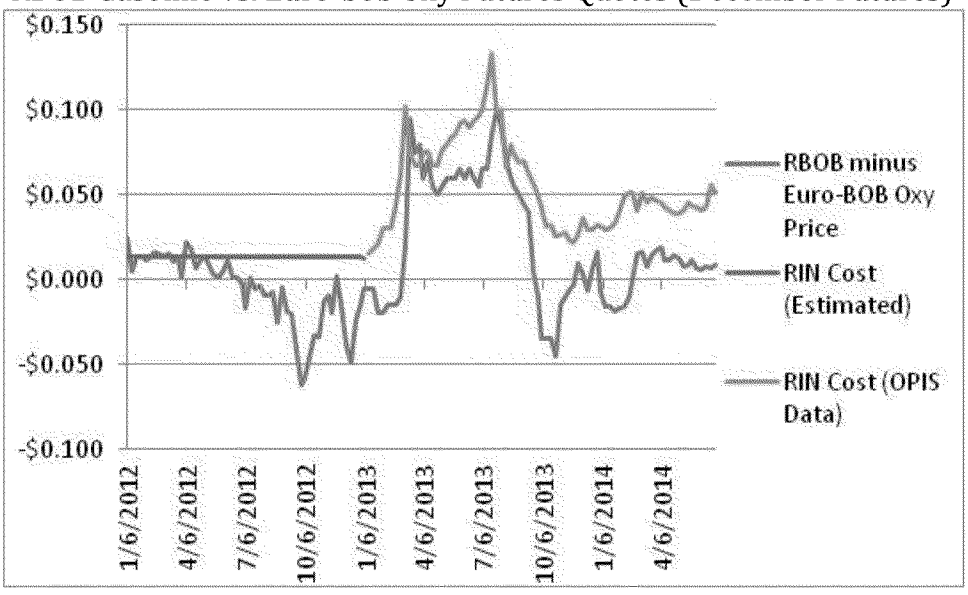
If the market is reacting to changes in RIN prices in the way that the scenarios presented in the previous section suggest, there are two places we expect we would be able to observe the impacts of the changing RIN prices in the market. The first is in the wholesale pricing of similar types of fuel with and without a RIN obligation. The scenarios presented above suggest that if RIN prices increase, obligated parties will respond by increasing the price they charge for petroleum based fuels to recover the cost of purchasing RINs to satisfy the RVO associated with the sale of these fuels. We would not, however, expect to see an increase in the price of similar fuels that are not subject to a RIN obligation. If we observed a sustained price delta between similar types of fuels with and without a RIN obligation, and if this price delta was approximately equal to the RIN cost associated with producing a gallon of petroleum based transportation fuel, it would provide support for our understanding that obligated parties are able to increase the cost of their petroleum blendstocks in order to recover the cost of their RIN obligations.

In the current market there exist several pairs of similar types of fuels wherein one of the pair carries a RIN obligation while the other does not. This allows us to examine the impact of RIN prices on the wholesale price of petroleum fuels. One such pair of fuels consists of gasoline produced for the domestic market (which is subject to an RVO) and gasoline sold for export to the European market (which carries no RIN obligation). Two other pairs are diesel based: diesel fuel is very similar to jet fuel and heating oil sold in the United States, but diesel fuel produced or imported into the U.S. has a RIN obligation while heating oil and jet fuel do not. EPA examined available pricing data for these three pairs of fuels (gasoline sold in the domestic v. foreign markets, diesel v. jet fuel, and diesel v. heating oil). Figure 13 shows the future quotes for RBOB Gasoline vs. Euro-bob Oxy for the December futures[27] (the price difference between gasoline grades sold for the United States and European markets) and the RIN obligation cost for gasoline produced or imported into the United States. Figures 14 and 15 show the price differentials between diesel and heating oil and diesel and jet fuel and the RIN obligation costs associated with diesel fuel. The correlation between the price differences of these similar fuels and the RIN obligation costs suggests that obligated parties were generally able to increase the price they charge for the RIN obligated petroleum products they sell for use as transportation fuel in the US to help recover their compliance costs under the RFS program.[28]

[27] Futures prices are for December of the current year, i.e. December 2012 throughout 2012, December 2013 throughout 2013, and December 2014 throughout 2014

[28] Or alternatively, that the market price adjusted to reflect the RIN cost just as it adjusts to reflect changes in crude oil prices and other costs

Figure 13
RBOB Gasoline vs. Euro-bob Oxy Futures Quotes (December Futures)



RIN Prices from OPISEthanol and Biodiesel Information Services
RBOB Gasoline vs. Euro-bob Oxy Futurer prices from CME Group

Figure 14
ULSD Price Minus Heating Oil Price (New York Harbor) and Per Gallon RIN Cost

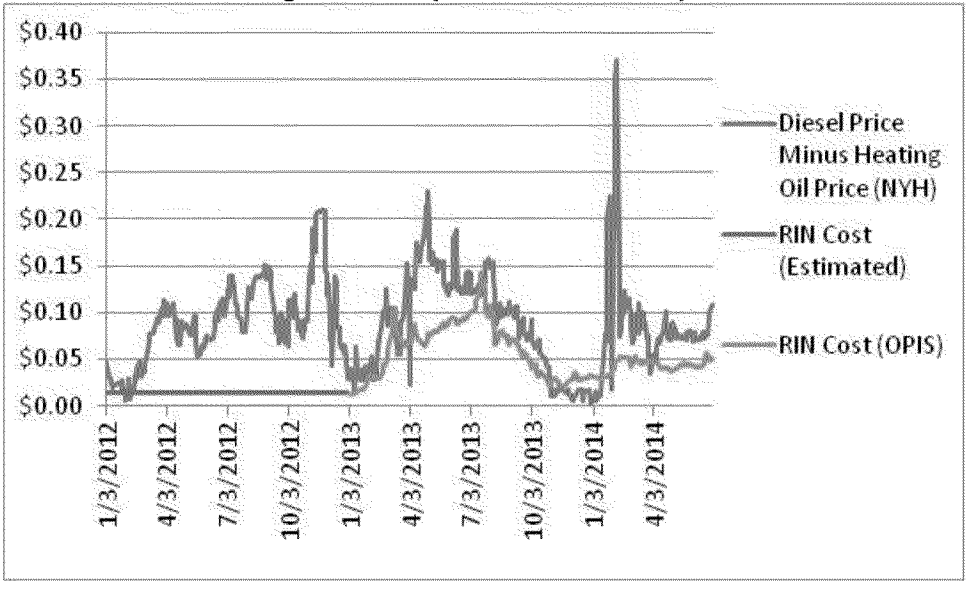
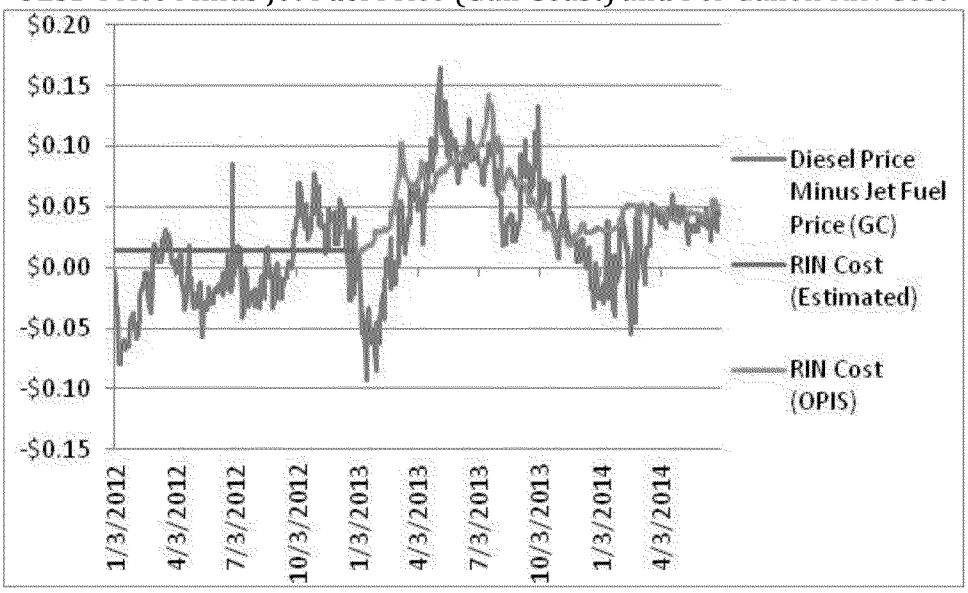


Figure 15
ULSD Price Minus Jet Fuel Price (Gulf Coast) and Per Gallon RIN Cost



The second area EPA examined to corroborate the results of our example scenarios was the pricing of ethanol, unblended gasoline, and blended fuels (such as E10 or E85) at the wholesale level. Examining this data should indicate whether or not the value of the RIN, which can be separated by the fuel blender when the ethanol is blended to produce a transportation fuel, is reflected in the wholesale price of the blended fuels. If the wholesale price for blended fuels, such as E10 and E85, is equal to or slightly greater than the volume weighted average price of neat ethanol (E100) and clear gasoline (E0) it would indicate that the RIN value is not reflected in the wholesale price of the blended fuels.[29] In this scenario, the fuel blender would retain any value associated with the separation and sale of the RIN. If, however, the price for the blended fuels was lower than the volume weighted average of neat ethanol and clear gasoline, it would indicate that the RIN value was at least partially reflected in the price of the blended fuels at the wholesale level.

The fuel blender can only profitably sell a blended fuel for less than the component costs of that fuel if they are realizing value elsewhere. Fuel blenders are able to separate and sell a RIN every time they blend a gallon of renewable fuel, and the RIN value can be used to discount the price of the blended fuel and offer it at a competitive price. Alternatively, the fuel blenders may attempt to retain some or all of the RIN value, especially in less competitive markets. As in the case where we examined the price delta between similar fuels with and without RIN obligations, if the difference between the blended fuel price and the volume weighted average price of neat ethanol and clear gasoline was approximately

[29] This is true when RIN prices are relatively high. When D6 RIN prices are only a few cents any blended fuel discount due to the sale of the RIN may be masked by a mark-up of the fuel price at the fuel blender

equal to the RIN value for each of these fuels, this would provide support for the argument that the RIN value is the basis for this difference.

For this analysis we used terminal pricing information from Des Moines, Iowa. We chose to use Des Moines for two reasons. First, unlike many terminals in other states, clear gasoline (E0) is readily available in Iowa at the wholesale level. Knowing the price of clear gasoline allows us to see RIN price impacts on petroleum blendstocks before they are blended with ethanol. Second, Iowa contains a relatively high number of ethanol plants that currently market E85 fuel blends, making it more likely to represent a competitive marketplace for E85. This increase in the competition in the E85 wholesale market increases the likelihood that the RIN value will be reflected in the price of E85 at the wholesale level (see Figure 6, where E85 sales in Iowa increased when RIN prices were high). In other markets, where blenders of E85 face less competition, they may be able to retain more of the RIN value for these higher level ethanol blends rather than reflecting them in the wholesale pricing of these blends.[30] Figure 16 shows the pricing of neat ethanol (E100), clear gasoline (E0), and E10 at the Des Moines terminal, as well as the average price for E85 available at the terminal and direct from ethanol production facilities.[31] Figure 17 compares the difference between the reported price of E10 and the calculated price using a volume weighted average of the component fuels (E100 and E0)[32] to the RIN value associated with E10.[33] Figure 18 compares the difference between the reported price of E85 and the calculated prices using a volume weighted average of the component fuels (E100 and E0)[34] to the RIN value associated with E85.[35]

[30] Over time, however, we would expect markets that are currently relatively uncompetitive to see increased competition and a decreasing opportunity to withhold RIN value from fuel costomers

[31] Prices for E0, E10, and E100 are Des Moines rack average prices, provided to EPA by Iowa RFA. Price for E85 is the average of all prices listed on the Iowa RFA Wholesale E85 Price Listing website (http://www.iowarfa.org/E85PastPriceProgram.php)

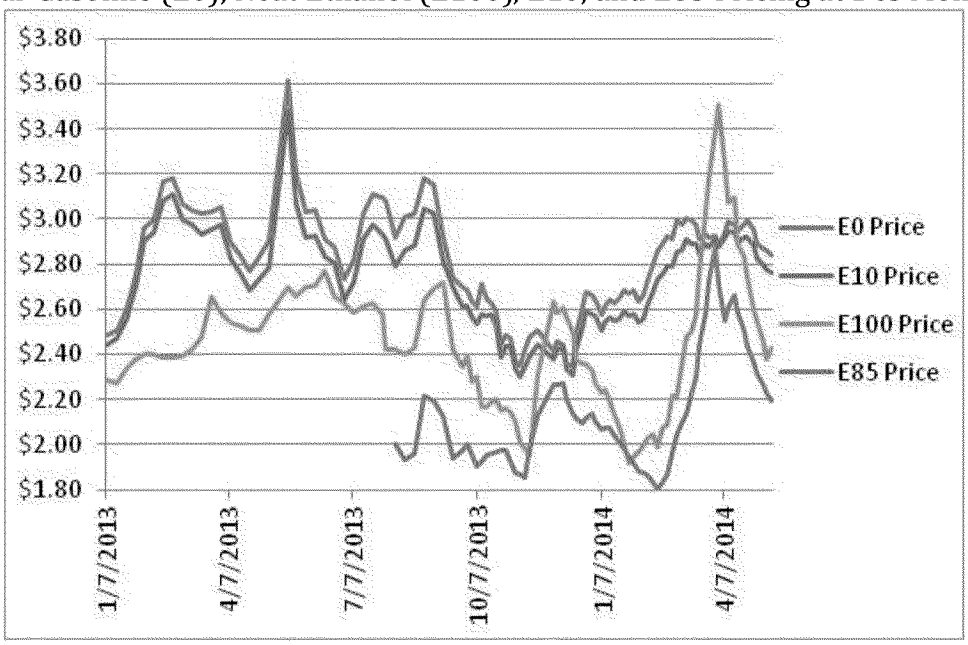
[32] Component E10 price = 0.9 * E0 price + 0.1 * E100 price

[33] E10 RIN value = 0.1 * D6 RIN price (RIN price information from OPIS Ethanol and Biodiesel Information Service

[34] Component E85 price = [1 – Ethanol Content] * E0 price + [Ethanol Content] * E100 price; Ethanol content is calculated based on the weekly average of all E85 offerings reported by Iowa RFA

[35] E85 RIN value = [Ethanol content of E85] * D6 RIN price (Ethanol content is calculated based on the weekly average of all E85 offerings reported by Iowa RFA ; RIN price information from OPIS Ethanol and Biodiesel Information Service

Figure 16
Clear Gasoline (E0), Neat Ethanol (E100), E10, and E85 Pricing at Des Moines



Fuel Prices from Iowa RFA (E85 Prices only available after August 8, 2014)

Figure 17
E10 Discount to Component Fuels vs. E10 RIN Value

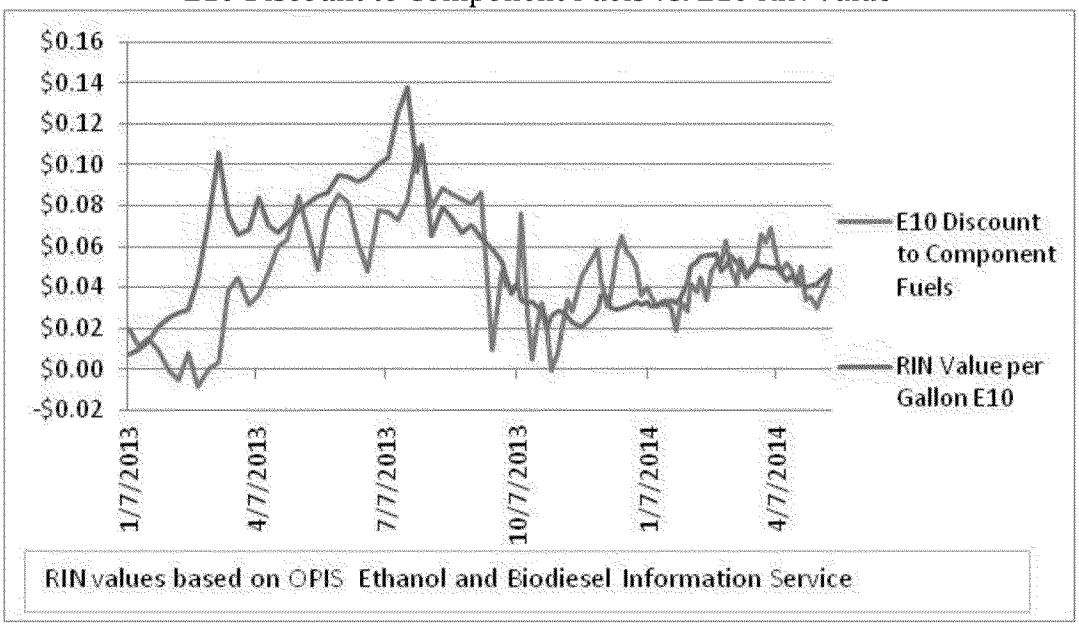
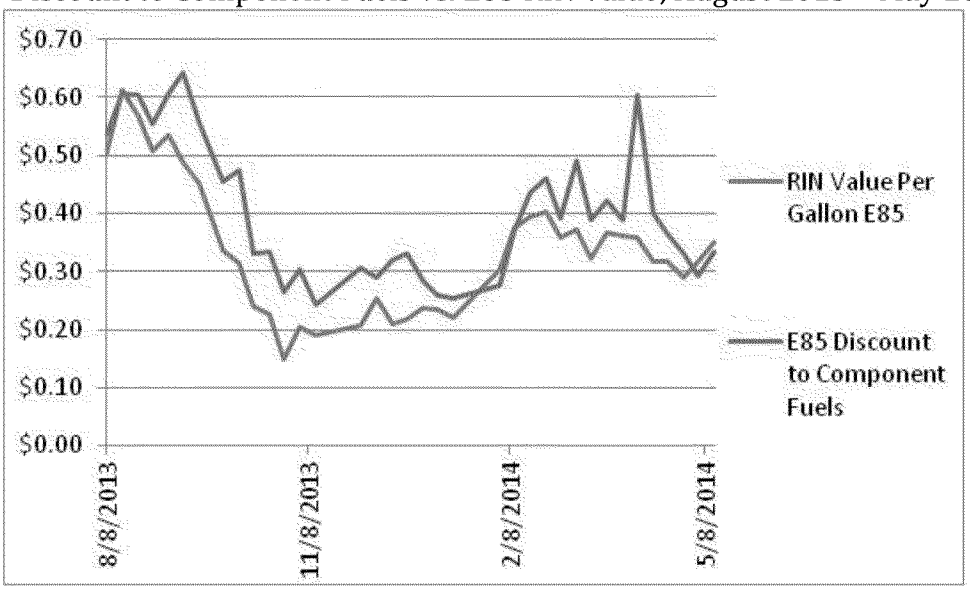


Figure 18
E85 Discount to Component Fuels vs. E85 RIN Value; August 2013 – May 2014



In reviewing the available data, it appears that, as predicted by scenarios in the previous section, the blended fuel prices at the wholesale level generally reflect the changing RIN prices. To state this another way, when determining the price at which to offer blended fuels, the data suggests the fuel blenders are taking into account the value received in the sale of the RIN. This further supports EPA's argument that, if all else remains equal, rising RIN prices may impact the relative pricing of fuel blends containing differing amounts of renewable fuel, but should not result in overall increases to blended fuel prices. We expect that these dynamics will hold when there are generally competitive markets for blended fuels at the wholesale and retail level. This is currently the case for much of the United States for E10 blends, however in most of the United States there is limited competition for E85 at both the wholesale and retail level. In their efforts to maximize profit and pay off their infrastructure investment, E85 wholesalers and retailers who face less competition may choose to withhold some or all or the RIN value if they believe that any increased sales volumes that result from lower priced E85 will be insufficient to overcome the lower per gallon profit margin. These high per-gallon profit margins may over time result in new parties entering the E85 wholesale or retail marketplace, and ultimately greater competition and lower E85 fuel prices for customers.[36]

While EPA has examined the available data in the marketplace to answer these two questions (Are obligated parties increasing the price of their RIN obligated fuels to recover RIN costs? And are fuel wholesalers reflecting the price of the RIN in their blended fuels?) we have not conducted a comprehensive analysis to address the question of whether or not a causal relationship between RIN prices and retail gasoline prices could be observed. EPA is aware, however, of others who have directly explored this issue, including an analysis

released by the Renewable Fuels Association conducted by Informa Economics[37] and Scott Irwin and Darrel Good of FarmDoc Daily,[38] and concluded that RIN prices in 2013 did not cause higher gasoline retail prices.

RIN Price Impacts on Merchant and Integrated Refiners

After RIN prices surged in 2013, several parties argued that high RIN prices put merchant refiners (refiners that do not blend the petroleum blendstocks they produced with renewable fuels) at a competitive disadvantage relative to integrated refiners (refiners who do own fuel blending operations). EPA maintains that this conclusion is based on a flawed analysis of the RIN and transportation fuel markets. Specifically, this argument rests on the assumption that parties who blended renewable fuels with petroleum-based fuels to produce transportation fuel were able to separate RINs from renewable fuel and obtain them at a lower cost, while merchant refiners were forced to buy RINs at a higher market price. Those who raised this concern argued that while this dynamic existed even when RIN prices were low, the high RIN prices in 2013, specifically the high D6 RIN prices, put them at a significant competitive disadvantage.

The misunderstanding at the heart of this flawed conclusion concerns the manner in which merchant refiners acquire RINs, which may differ from the method generally used by integrated refiners. Because merchant refiners do not own fuel blending infrastructure, they generally purchase RINs from fuel blenders who do not have RIN obligations, or other parties who have RINs in excess of their obligations. For these merchant refiners there is a direct and obvious cost of purchasing RINs to satisfy their obligations. Integrated refiners generally obtain RINs by purchasing renewable fuels with attached RINs. As a result, integrated refiners are not paying a separate price for the RINs they acquire, but rather simultaneously purchasing both the renewable fuel and the associated RINs. At the same time, the increased value merchant refiners receive for their petroleum fuel is hidden in the market pricing of the fuels. Several merchant refiners have claimed that they cannot increase the price of their petroleum products, as the price they receive is determined by market listings such as NYMEX. However, even if true, the higher NYMEX price for gasoline sold in the United States relative to the price of gasoline in foreign markets shown in Figure 13 suggests that the NYMEX prices reflect the RIN cost incurred by refiners who sell petroleum products into the U.S. market. While these merchant refiners may simply be receiving prices for their products based on market listings, the data we have reviewed

[37] "Analysis of Whether Higher Prices of Renewable Fuel Standard RINs Affected Gasoline Prices in 2013." Informa Economics. January 2014. In examining the available information, Informa Economics concluded that RIN prices did not have a causal relationship with gasoline prices. Other factors, notably the refiner crude oil composite acquisition cost, were found to have a causal relationship with gasoline prices in 2013. While this paper does not explore the mechanics of the RIN and transportation fuels market, and therefore cannot be used to verify EPA's understanding of the RIN market dynamics, it nevertheless supports our conclusion that high RIN prices did not cause higher gasoline prices in 2013.

[38] Irain, Scott, and Darrel Good. "High Gasoline and Ethanol RIN Prices: Is There a Connection?" FarmDoc Daily. Department of Agriculture and Consumer Economics, University of Illinois Urbana-Champaign, 27 Mar. 2013. Web. 10 Sept. 2014.

suggests that the market has adjusted to increased D6 RIN prices and they are nevertheless receiving a higher price for their products that generally reflects their RIN costs. If this is the case, exempting merchant refiners (or any other obligated party) from their RIN obligation while maintaining RIN obligations for other obligated parties would allow the exempted parties to benefit from higher petroleum prices that reflect RIN costs while incurring no RIN costs themselves. This would allow the exempted parties to benefit from increased profit margins relative to other obligated parties as a direct result of the RFS program.

The data EPA has analyzed also indicates that parties that blended renewable fuels were not able to retain the full RIN value. Rather, the price received for a RIN was effectively used to subsidize the price of the renewable from which it was separated, and the price of blended fuels generally reflected this lower renewable fuel price. As discussed in the preceding section and shown in Figures 17 and 18 above, the data EPA has reviewed for Iowa shows that the price of blended fuels at the wholesale level in 2013 was generally less than the weighted average prices of the component fuels. This difference was related to the RIN value associated with the renewable fuel content in these blended fuels. This suggests that fuel blenders who purchased renewable fuels with attached RINs, whether independent or owned and operated by integrated refiners, were selling the renewable fuels for significantly less than the purchase price after the renewable fuels had been blended to produce transportation fuel and the RINs had been separated. Whether the integrated refiners attribute the cost associated with selling the renewable fuels for less than the price they paid to purchase these fuels to their renewable fuel acquisition operations, blending operations, or refining operations, they are subject to a cost for acquiring RINs just like the merchant refiners as long as they are selling renewable fuels at a price lower than the purchase price. If the integrated refiners were to attempt to recover the full purchase price of the renewable fuels in the price of the blended fuel they would likely not be competitive with the independent fuel blenders as the available data suggests blended fuel prices generally reflect discounted renewable fuel prices (net the RIN value).

We further believe that the obligated parties were generally able to recover this increase in the cost of meeting their RIN obligations in the price they received for their petroleum-based products in 2013. We do not argue the fact that higher RIN prices lead to greater RIN acquisition costs for some obligated parties. We do believe, however, that these higher costs have a similar impact on all obligated parties. This includes not only merchant and integrated refiners, but also fuel importers who may import only a single product, such as gasoline or diesel fuel, as the primary mechanism for recovering the RIN cost is through the sales price of the petroleum based blendstocks. There are a number of factors that may impact an individual obligated party's RIN costs, including their RIN purchasing strategy (contract v. spot purchases, separated RINs v. RINs attached to renewable fuels), investments in renewable fuel production and blending infrastructure, geographic location, and many others unique to each obligated party's business. While changing RIN prices may result in profit or costs for one obligated party relative to another, these impacts are largely due to individual business decisions rather than the systematic design of the RFS program. In this way the increasing RIN prices are similar to an increase in the price of crude oil. A rise in the price of crude oil has a significant impact on a refiners cost to produce gasoline

blendstocks, but it will likely not impact their competitiveness, as all refiners are similarly impacted. The impacts on individual refiners may have slight variations due to crude oil purchase contracts or crude supply options, but these differences are indicative of market positions taken by individual refineries rather than a systematic competitive disadvantage.[39]

In the preceding section we examined available data on the price obligated parties received for similar fuel types with and without RIN obligations. In demonstrating that there was a difference in the prices for these fuels, this data, shown in Figures 13 and 16, suggests that obligated parties are generally able to recover the cost of meeting their RIN obligations in the price of their petroleum blendstocks. If this were not the case, we would expect that merchant refiners would have an incentive to export the gasoline and diesel fuel they produce or to increase production of heating oil or jet fuel, as these fuels do not incur a RIN obligation. If a significant volume of fuel was exported to foreign markets this would create a shortage of supply in the U.S., and prices in the U.S. would rise. These higher domestic prices would provide a price signal to increase domestic production, increase fuel imports, or reduce exports to meet the demand, despite this fuel being subject to an RVO.

Finally, claims that high RIN prices put merchant refiners at a competitive disadvantage relative to integrated refiners ignore the compliance flexibility built into the RIN system. Obligated parties, including independent refiners, may acquire RINs by purchasing renewable fuel with attached RINs and retaining the RINs after selling or blending the renewable fuel, by purchasing separated RINs on the RIN spot market, or through contract arrangements. A merchant refiner's status does not mandate that the refiner purchase only separated RINs. Rather, all obligated parties can choose how and when to acquire RINs to comply with the RFS program. To the extent that merchant refiners choose—for economic or other reasons—to limit themselves to purchasing RINs on the market, that choice is their own, and not one required by EPA's rule. If merchant refiners believe that owning and operating blending operations, or purchasing renewable fuels, separating and retiring the RINs, and reselling the renewable fuel without RINs would present a significant financial or strategic advantage, they may, and generally would, enter the marketplace in this capacity.

Conclusion

In this document we have examined the RIN, renewable fuels, and transportation fuels marketplace. We have explored the question of the cause of elevated D6 RIN prices observed in 2013 and shown that the E10 blendwall was a significant factor in these rising RIN prices. Due to the complexity of the RIN market, we cannot precisely predict the future

[39] There are significant similarities between the RIN markets and how refiners make their crude oil purchasing decisions. Integrated refiners may process their own crude or procure it from the open market, while independent refiners purchase all of their crude oil. Refiners, both integrated and independent, are differently situated to process or option different crudes. They have differing business strategies for making these decisions that may impact their relative profitability.

price of D6 RINs. We would not, however, expect the D6 RIN price to return to the prices experienced from 2010 to 2012 unless the cost of production of ethanol or other renewable fuels fell sufficiently below the cost of gasoline on an energy-equivalent basis.

We also examined data from 2013 which suggested that rising RIN prices did not result in an increase in retail transportation fuel prices in 2013 (considering both gasoline and diesel together), due to the lower net cost of renewable fuels enabled by the high RIN prices. While higher RIN prices increase the cost of RFS compliance for obligated parties purchasing separated RINs, these obligated parties generally recover these costs in the price of their petroleum blendstocks. As a result, a slight decrease in the price of ethanol-gasoline blends, which contain a relatively large amount of renewable fuels, is expected to be offset by an increase in the price of diesel fuel, which generally contains lower levels of renewable fuel. This does not necessarily mean that there is no cost to increasing the volume of renewable fuels required to be blended into the transportation fuel pool. If renewable fuels cost more on an energy-equivalent basis than the petroleum fuels they displace, as they did in 2013, there is a cost to using these renewable fuels. The higher the required volume of these fuels, the higher this cost will be. As a result, blending increasing volumes of renewable fuels likely increased the total cost of transportation fuel in the United States in 2013, relative to a scenario where there was no mandate for renewable fuels.

Finally we examined how merchant refiners and integrated refiners were impacted by high RIN prices. The available data suggests that while there may be some variation in how high RIN prices impact individual obligated parties due to differing business decisions, RIN acquisition strategies, and many other factors, the structure of the RFS program does not cause a systematic competitive advantage for one type of refiner or the other. The RIN, renewable fuel, and transportation fuel market is complex, and there are limitations to the available data. EPA will continue to monitor market prices and impacts over time in an attempt to better understand the dynamics and watch for signs of market disruption. Based on available data, however, the RIN market seems to be functioning generally as expected; providing an incentive for the continued growth of renewable fuels in the transportation fuel market without causing overall increases to the retail price of transportation fuel.

To: Dravis, Samantha[dravis.samantha@epa.gov]; Greaves, Holly[greaves.holly@epa.gov]
Cc: brittanybolen.epa@gmail.com[brittanybolen.epa@gmail.com]
From: Jackson, Ryan
Sent: Wed 3/22/2017 8:41:55 PM
Subject: RE: OP budget

Samantha, some things are worth conversations.

From: Dravis, Samantha
Sent: Wednesday, March 22, 2017 4:04 PM
To: Greaves, Holly <greaves.holly@epa.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: brittanybolen.epa@gmail.com
Subject: OP budget

Ex. 5 - Deliberative Process

Samantha

Samantha Dravis

Senior Counsel / Associate Adminstrator for Policy

U.S. Environmental Protection Agency

From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: Meeting with Steptoe and the Association of American Railroads on the Point of Obligation
Start Date/Time: Wed 6/14/2017 6:00:00 PM
End Date/Time: Wed 6/14/2017 6:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: On behalf of our client, the Association of American Railroads (AAR), I respectfully request an opportunity to meet with you to discuss the point of obligation under the Renewable Fuels Standard. AAR represents the major freight railroads, which are significant end-users of diesel fuel, and has a unique perspective to offer on this issue.

Attendees are flying in for this meeting.

- Ian Jefferies - AAR SVP Govt Relations
- Kathy Kirmayer - AAR SVP – Law
- Garrick Francis – CSX
- Bruno Maestri - NS
- Mike Smythers – BNSF
- Printz Bolin – UP
- Eva Rigamonti, Steptoe & Johnson LLP

Eva Rigamonti

Associate

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Steptoe

+1 202 429 6457 direct Steptoe & Johnson LLP

+1 202 429 3902 fax 1330 Connecticut Avenue, NW

Washington, DC 20036

www.steptoe.com

From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: Meeting with Cozen O'Connor & Amazon
Start Date/Time: Wed 7/12/2017 8:30:00 PM
End Date/Time: Wed 7/12/2017 9:00:00 PM

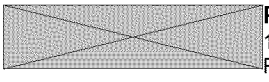
Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees: Andrea Fava, Brian Huseman of Amazon, Lori Kalani and Jerry Kilgore of Cozen.

Request: I am writing to request a meeting for our client, Amazon. Carletta Ootton, who oversees Amazon's Environmental and Sustainability teams and her colleague, Andrea Fava, Public Policy Director, would like to meet with Ms. Dravis and the EPA policy team to discuss some of their initiatives, to learn more about the EPA's priorities and where Amazon might have opportunities to collaborate on issues.

Contact:


Emily Lundahl
Policy Coordinator | Cozen O'Connor
1200 19th Street, NW | Washington, DC 20036
P: 202-471-3424 F: 202-912-4812
Email | Map | cozen.com

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with SEMA
Start Date/Time: Wed 3/29/2017 3:00:00 PM
End Date/Time: Wed 3/29/2017 3:45:00 PM

Hi

Would you set this meeting up from Samantha's calendar? Thank you.

Topic: Meeting with SEMA

Date: March 29

Time: 11:00 – 11:30

Location: 3500 WJC (8 attendees are expected)

Required: Jonathan E. Missner <JMissner@steinmitchell.com>

Cc: Kime, Robin <Kime.Robin@epa.gov>; Germann, Sandy Germann.Sandy@epa.gov; Shaw, Nena <Shaw.Nena@epa.gov>

Notes:

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact:

Jonathan E. Missner I Managing Partner

Stein Mitchell Cipollone Beato & Missner LLP

1100 Connecticut Ave, NW Suite 1100

Washington, DC 20036

D 202.661.0956

M 301-503-3322

jmissner@steinmitchell.com

From: Kime, Robin
Location: American Chemistry Council - 700 2nd Street NE (10th Floor)
Importance: Normal
Subject: American Chemistry Council's Environmental Management Committee Spring Meeting
Start Date/Time: Tue 5/23/2017 4:00:00 PM
End Date/Time: Tue 5/23/2017 5:00:00 PM

Contact:

Anna Burhop| American Chemistry Council

Director, Environment

Regulatory and Technical Affairs

700 2nd Street NE | Washington, DC | 20002

(202) 249-6440

anna_burhop@americanchemistry.com

www.americanchemistry.com

From: Inge, Carolyn
Location: 3513A
Importance: Normal
Subject: Brief Meeting Today 3/7
Start Date/Time: Tue 3/7/2017 9:00:00 PM
End Date/Time: Tue 3/7/2017 9:15:00 PM

Does Ms. Dravis have a 10 minute window today or tomorrow morning? Pete can swing by EPA offices anytime that is convenient on your end.

Thanks so much for working with us.

From: Regan Robertson [mailto:rrobertson@depausa.org]
Sent: Tuesday, March 7, 2017 1:27 PM
To: Dravis, Samantha <dravis.samantha@epa.gov>
Cc: Pete Regan <pregan@depausa.org>
Subject: Re: Brief Meeting Today 3/7 or Tomorrow AM 3/8

Good afternoon, Ms. Dravis.

I just spoke with Mona (sp?) in your office and wanted to follow up to see if you had 10 (or less) minutes to meet with Pete today or tmrw morning regarding the attached memo.

Pete flies out tomorrow (Wed 3/8) afternoon and is available anytime prior to then that may work for you

Thanks and looking forward to hearing from you!

Regan

On Mon, Mar 6, 2017 at 2:25 PM, Regan Robertson <rrobertson@depausa.org> wrote:

Hi Ms. Dravis,

Regarding message below- please see attached.

Please 'reply all' if you are available for 5-10 minutes to meet with Pete tomorrow (Tues) 3/7. Thanks so much!

On Mon, Mar 6, 2017 at 1:47 PM, DEPA <pregan@depausa.org> wrote:

Hi Samantha,

Nice to meet you. □

Would you happen to have 5-10 mins tomorrow/Tue for me to come to office?

Thanks so much,

-Pete

Mobile 918-845-1553

Copy: Regan Robertson (pls reply all the Memo for Samantha).

Peter J. Regan

Executive Director

DEPA

Domestic Energy Producers Alliance

4124 S. Rockford Ave., Suite 201

Tulsa, OK 74105

T: 918-293-3921

pregan@depausa.org

www.depausa.org

On Feb 28, 2017, at 2:17 PM, Hale, Michelle <hale.michelle@epa.gov> wrote:

Certainly! Samantha Dravis would be a good staffer to talk with regarding your topic of concern. I am copying her on this email. Thank you, Pete.

From: DEPA [mailto:pregan@depausa.org]
Sent: Tuesday, February 28, 2017 12:47 PM
To: Hale, Michelle <hale.michelle@epa.gov>
Subject: Re: DEPA on March 7 or 8

Will do and thanks, Michelle.

Is there a chance to have a brief mtg (or brief telephone call) with you or one of your deputies to put an issue on the radar screen re EPA?

I will send a 1 pager before close of business tomorrow re the topic.

Thanks and will get details re April 3/4.

Appreciate ya,

-Pete

Peter J. Regan

Executive Director

DEPA

Domestic Energy Producers Alliance

4124 S. Rockford Ave., Suite 201

Tulsa, OK 74105

T: 918-293-3921

pregan@depausa.org

www.depausa.org

On Feb 28, 2017, at 9:39 AM, Hale, Michelle <hale.michelle@epa.gov> wrote:

Hi, Pete. It is good to hear from you. Next week is complicated for the Administrator's schedule and so unfortunately, we won't be able to set up a meeting on March 7 or 8. Would you mind sending me details on the meetings being held on April 3 and 4?

Thank you!

Michelle Hale

Executive Assistant to the Administrator

Environmental Protection Agency

1200 Pennsylvania Ave., NW,

WJCS, Suite 3000

Washington, D.C. 20460

(202) 564-1430

Confidentiality Warning: This message and any attachments are intended only for the use of the recipient(s), are confidential, and may be privileged. If you are not the intended recipient, you are hereby notified that any review, retransmission, conversion to hard copy, copying, circulation or other use of all or any portion of this message and any attachments is strictly prohibited. If you are not the intended recipient, please notify the sender immediately by return email and delete this message and any attachments from your system.

--

Regan Robertson

DEPA

Domestic Energy Producers Alliance

4124 S Rockford Ave. Ste 201

Tulsa, OK 74105

Telephone: 918-293-3921

rrobertson@depausa.org

www.depausa.org

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Follow-Up to API Discussion
Start Date/Time: Fri 5/19/2017 3:00:00 PM
End Date/Time: Fri 5/19/2017 3:30:00 PM

From: Inge, Carolyn
Location: DCRoomARN3530CFTB/DC-Ariel-Rios-AO
Importance: Normal
Subject: Meeting with Air Liquide
Start Date/Time: Wed 3/22/2017 7:00:00 PM
End Date/Time: Wed 3/22/2017 7:45:00 PM
Air Liquide Meeting Request Administrator Pruitt.pdf

Topic: Meeting with Air Liquide

Date: March 22

Time: 3:00 – 3:45

Location: Request 3530 WJCN or 4530 WJCN or 6530 WJC please (15 attendees are expected)

Required: Dee.Martin@policyres.com; Kreutzer, David <kreutzer.david@epa.gov>

Cc: Kime, Robin <Kime.Robin@epa.gov>; Germann, Sandy Germann.Sandy@epa.gov;

Notes:

Include the attached request in the meeting invitation.

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587

DEE MARTIN
Partner
Dee.Martin@policyres.com
T: +1.202.828.5818 | F: +1.202.857.2146
BRACEWELL LLP
2001 M Street NW, Suite 900 | Washington, D.C. | 20036-3310
policyres.com | profile | download v-card

Air Liquide

February 22, 2017

The Honorable E. Scott Pruitt
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, D.C. 20460

Re: Meeting with Air Liquide S.A. Chairman and CEO Benoit Potier and American Air Liquide Holdings, Inc. Chairman and CEO Michael J. Graff

Dear Administrator Pruitt:

On behalf of Air Liquide and our over 20,000 U.S. employees, I write to congratulate you on your confirmation as the Administrator of the U.S. Environmental Protection Agency (EPA). Air Liquide is the world's largest manufacturer and distributor of industrial gases (e.g., hydrogen, nitrogen, and oxygen). We are headquartered in Houston, Texas, and we operate in every state in the U.S. Like you, we have long believed in finding the appropriate balance between protecting our natural resources and providing the regulatory certainty that allows our private sector to continue to lead the world in innovation.

To that end, I write to request a meeting with Air Liquide S.A. Chairman and CEO Benoit Potier who will be in Washington, D.C. on March 22, 2017 and me; we are available at your convenience. In addition to our leadership of Air Liquide:

- Mr. Potier serves as the Chairman of the European Round Table (ERT). As such, Mr. Potier leads 50 major multinational corporations with combined revenues exceeding $2.37 trillion that sustain 6.8 million jobs, many of whom invest significantly in the U.S. like Air Liquide. In this capacity, Mr. Potier works closely with global companies on issues related to the appropriate role of environmental regulation and effective ways to stimulate technological innovation.

- I serve on the Board of Directors and Executive Committee of the American Chemistry Council, as well as on the Board of Directors and Executive Committee of the National Association of Manufacturers. As you know, both organizations seek to strengthen the U.S. economy and increase domestic manufacturing jobs. My leadership role in these organizations enables me to hear from a broad array of domestic manufacturers about the environmental regulatory issues they face and how we can make these industries competitive again while also protecting our environment.

17cv01906 Sierra Club v. EPA ED_001523_00005578-00001

Mr. Potier and I would greatly appreciate the opportunity to discuss Air Liquide's work related to technological innovations that can continue to foster energy production and reliability while reducing environmental risk. Examples of Air Liquide's leadership in this area include:

- Reducing Water Use in Hydraulic Fracturing – Air Liquide has responded to concerns over the use of large quantities of water as part of the hydraulic fracturing process by using nitrogen or carbon dioxide foam-based fluids. The use of these fluids in the process has demonstrated water savings of nearly 50 percent.

- Reducing Carbon Emissions from Power Plants – Air Liquide has responded to the need to reduce carbon emissions from coal-fired power plants by being at the forefront of the development of oxy-combustion technology. This technology uses oxygen—instead of air—for combustion. This produces carbon dioxide enriched flue gas that can then be captured for either sequestration or use in enhanced oil recovery.

We look forward to discussing these technologies and more as you continue to contemplate your regulatory agenda at EPA. If you have any questions, please contact our Vice President for Communications and Public Affairs at Michael.Rosen@airliquide.com or 713-624-8023 or me at any time. We look forward to hearing from you.

Sincerely,

Michael J. Graff
Chairman, President, and Chief Executive Officer American Air Liquide Holdings, Inc.

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with D. Munoz/Energy Fuels
Start Date/Time: Thur 5/25/2017 6:00:00 PM
End Date/Time: Thur 5/25/2017 6:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Darrin R. Munoz and Paul Goranson from Energy Fuels will plan to discuss the Part 192 rulemaking and the abandoned uranium mines cleanup out of Region 9.

Darrin R. Munoz
Director
darrin.munoz@FaegreBD.com Download vCard
D: +1 202 312 7468
Faegre Baker Daniels LLP
1050 K Street NW | Suite 400 | Washington, DC 20001, USA

From: Inge, Carolyn
Location: 3530 WJCN
Importance: Normal
Subject: Meeting with API
Start Date/Time: Tue 3/7/2017 4:00:00 PM
End Date/Time: Tue 3/7/2017 4:45:00 PM

Topic: Meeting with API

Date: March 7

Time: 11:00 – 11:45

Location: 3500 WJC (10 attendees are expected)

Required: moffetth@api.org

Cc: Kime, Robin <Kime.Robin@epa.gov>; Germann, Sandy Germann.Sandy@epa.gov;

Notes:

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: Robin Kime (202) 564-6587 or the main OP line (202) 564-4332

API representatives will discuss issues of mutual interest that are timely for EPA consideration.

Contact:

Hilary Moffett

Director, Federal Relations

American Petroleum Institute

202-682-8040 (desk)

612-710-8696 (cell)

MoffettH@api.org

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: A. J. Ferante/Vinyl Institute Executive Committee
Start Date/Time: Tue 5/16/2017 8:15:00 PM
End Date/Time: Tue 5/16/2017 8:45:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: On May 16, the Executive Committee for VI would come to you for a brief discussion of issues with you.

Attendees:

Bob Buesinger, Senior Vice President – Vinyls, Westlake Chemical, Houston, TX

Grant Evans, Vice President and General Manager – Vinyls, Occidental Chemical Corporation, Dallas, TX

Mary Bachynsky, Director of EHS

Dick Mason, Corporate Secretary, Shintech Inc., Houston, TX

Dick Doyle, President and CEO, Vinyl Institute, Washington, DC

Rich Krock, Vice President Regulatory and Technical Affairs, Vinyl Institute, Washington, DC

JC Walker, Partner, Keller & Heckman, Washington, DC

Contact:

Anthony J. "A.J." Ferate, JD

(202) 486.7211

From: Amar, Freda
Importance: Normal
Subject: CERAWEEK SPEAKER Prep Call: Dr. Daniel Yergin and Scott Pruitt's Staff: Today (Thurs, March 2) @ 2:00-3:00pEST
Start Date/Time: Thur 3/2/2017 7:00:00 PM
End Date/Time: Thur 3/2/2017 8:00:00 PM

.....
;;;;;;;;;;
[Note: Please scroll to the bottom of this notification to find the dial-in instructions for today' conference call.]
Thanks Freda. Here you go. Can you just add me as optional but I won't be joining the call.
Dravis.samantha@epa.gov
Konkus.john@epa.gov
From: Amar, Freda [mailto:Freda.Amar@ihsmarkit.com]
Sent: Thursday, March 2, 2017 11:25 AM
To: Dickerson, Aaron <dickerson.aaron@epa.gov>
Subject: RE: CERAWEEK SPEAKER Prep Call: Dr. Daniel Yergin and Scott Pruitt
Yes, I will send out an invite that includes conference call dialing instructions, but will need their email addresses.
From: Dickerson, Aaron [mailto:dickerson.aaron@epa.gov]
Sent: Thursday, March 02, 2017 11:21 AM
To: Amar, Freda
Subject: RE: CERAWEEK SPEAKER Prep Call: Dr. Daniel Yergin and Scott Pruitt
Hi Freda
Can we schedule a call at 2:00 today? The participants from EPA will be Samantha Dravis and John Konkus. Do you have a call-in number as Samantha and John may be calling in from different locations.
From: Amar, Freda [mailto:Freda.Amar@ihsmarkit.com]
Sent: Wednesday, March 1, 2017 4:56 PM
To: Dickerson, Aaron <dickerson.aaron@epa.gov>
Cc: Amar, Freda <Freda.Amar@ihsmarkit.com>
Subject: CERAWEEK SPEAKER Prep Call: Dr. Daniel Yergin and Scott Pruitt
Importance: High
Dear Aaron
I hope this email finds you well – and Congrats!
We are very excited that Mr. Pruitt has accepted our invitation to join us at CERAWeek! I am the executive assistant and scheduler for Dr. Daniel Yergin, the Chairman and Founder of CERAWeek. Dr. Yergin reaches out to all the plenary speakers in advance to review their sessions, the program and Q&A. Also, it provides time for the speakers and/or their handlers to become familiar with the program and it's setup while at the same time answer any queries. Therefore, I am in search of a time amenable on your schedule to do a prep conference call tomorrow.
Could you please check your schedule and let me know what's available? Dr. Yergin has a full day, but we can do 2:00-3:00 or 3:00-4:00p, or even between 4:00-5:00p if that works for you. We're literally down to the wire before kick-off, and hope we can be introduced over the phone, and prepare him for the session ahead. In addition, please provide the names/email addresses for all who will participate on the call from your end so they will be included on the email invite. Dr. Yergin only needs about 30 minutes of Mr. Pruitt's time, or that of his staff, but I am setting aside as much as an hour to accommodate if the extra time is needed.
Accompanying Dr. Yergin from our office will be Elena Pravettoni, Senior Economist; and Libby Tillemann-Dick, Research Manager.

Once a time is confirmed, I will send out the invite with call-in details.
I look forward to hearing from you soon.
Best regards,
Freda Amar



Freda Amar
Senior Executive Assistant to Daniel Yergin | Vice Chairman
1150 Connecticut Avenue, NW | Suite 400 | Washington, DC 20036
Direct: 202-857-5185 **Mobile:** 202-550-7073
freda.amar@ihsmarkit.com



-- Do not delete or change any of the following text. --

Join WebEx meeting

Meeting number (access code): 634 122 839

Join by phone

+1 866 282 7366 US Toll Free

+1 210 606 9466 US Toll

Global call-in numbers | Toll-free calling restrictions

Can't join the meeting?

If you are a host, go here to view host information.

IMPORTANT NOTICE: Please note that this WebEx service allows audio and other information sent during the session to be recorded, which may be discoverable in a legal matter. By joining this session, you automatically consent to such recordings. If you do not consent to being recorded, discuss your concerns with the host or do not join the session.

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with California Independent Petroleum Association: California-specific issues, including the Underground Injection Control Program
Start Date/Time: Thur 5/11/2017 3:30:00 PM
End Date/Time: Thur 5/11/2017 4:00:00 PM

Hi

Would you add this from Samantha's calendar please? Much appreciated.

Topic: Meeting with California Independent Petroleum Association: California-specific issues, including the Underground Injection Control Program

Date: 5/11

Time: 11:30 – 12:00

Location: 3500 WJCN

To: Bolen, Brittany <bolen.brittany@epa.gov>; Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Schwab, Justin <schwab.justin@epa.gov>; rock@cipa.org; Mimma Faudale <mfaudale@carpiclay.com>; Eric Swedlund (eswedlund@carpiclay.com) <eswedlund@carpiclay.com>; David Wetmore (dwetmore@carpiclay.com) dwetmore@carpiclay.com; Greenwalt, Sarah <greenwalt.sarah@epa.gov>

Cc: Inge, Carolyn <Inge.Carolyn@epa.gov>; Kime, Robin <Kime.Robin@epa.gov>

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: We would welcome an opportunity to meet Mr. Pruitt in his office (or any other location convenient to him) to discuss California-specific EPA issues with the

Administrator, particularly the Underground Injection Control Program (UIC).

Contact:

Rock Zierman

Chief Executive Officer

California Independent Petroleum Association

1001 K Street, 6th Floor

Sacramento, CA 95814

916-447-1177 P

916-447-1144 F

rock@cipa.org

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Pipeline Permitting Opportunities with Enbridge
Start Date/Time: Tue 5/9/2017 7:00:00 PM
End Date/Time: Tue 5/9/2017 7:30:00 PM

Hi

Please add this from Samantha's calendar. Thank you.

Topic: Pipeline Permitting Opportunities with Enbridge

Date: 5/9

Time: 3:00 – 3:30 p.m.

Location: 3500 WJCN

Required: Bolen, Brittany <bolen.brittany@epa.gov>; Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Schwab, Justin schwab.justin@epa.gov; Pete.Sheffield@enbridge.com

Cc: Inge, Carolyn <Inge.Carolyn@epa.gov>; Kime, Robin <Kime.Robin@epa.gov>

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: As a follow-up to the Administrator's recent roundtable discussion in OKC, any chance you might be available to meet with Brad Shamla (our head of liquids pipeline operations in the U.S.)?

Contact:

Pete Sheffield

ENBRIDGE

Vice President, U.S. External Affairs
TEL: 202-347-2053 | CELL: 202-997-3178 | pete.sheffield@enbridge.com
20 F Street NW, Suite 550, Washington, D.C. 20001

From: Catanzaro, Michael J. EOP/WHO
Location: 224 EEOB
Importance: Normal
Subject: CAFE meeting
Start Date/Time: Fri 5/5/2017 6:30:00 PM
End Date/Time: Fri 5/5/2017 7:30:00 PM

-----Original Appointment-----

From: Catanzaro, Michael J. EOP/WHO

Sent: Wednesday, May 3, 2017 2:33 PM

To: Catanzaro, Michael J. EOP/WHO; Mitch Bainwol; David Schwietert; Dravis, Samantha; Bolen, Brittany (RPC); Gunasekara, Mandy (EPW); Owens, James (OST); Mary Neumayr (Mary.B.Neumayr@ceq.eop.gov)

Subject: CAFE meeting

When: Friday, May 5, 2017 2:30 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).

Where: 224 EEOB

Your transportation request has been Updated.

Reason for update : Pick Up Time changed
Confirmation Number: 75150

Passenger Information

- Name: SAMANTHA DRAVIS/AA
- Number: 2025662845
- Pickup Time: 2017-05-05 15:45:00.0
- Pickup Location: EEOB
- Drop-Off Location: COURTYARD

Vehicle Information

- Tag: G41-5078M
- Vehicle Type: MINI VAN
- Make : DODGE
- Model : CARAVAN

- Color : SILVER

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Hyundai
Start Date/Time: Fri 5/12/2017 2:00:00 PM
End Date/Time: Fri 5/12/2017 2:30:00 PM

Hi,

Will you please set this up from Samantha's calendar? Much appreciated.

Topic: Meeting with Hyundai

Date: 5/12

Time: 10:00 – 10:30 a.m.

Location: 3500 WJCN

Required: rguerard@hyundai-dc.com; Bolen, Brittany <bolen.brittany@epa.gov>; Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Schwab, Justin <schwab.justin@epa.gov>

Cc: Inge, Carolyn <Inge.Carolyn@epa.gov>; Kime, Robin <Kime.Robin@epa.gov>

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact:

Richard B. Guerard

Manager, Government Affairs

Hyundai Motor Company

660 North Capitol Street NW

Washington, DC 20001

T: 202-279-1607

rguerard@hyundai-dc.com

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with the National Biodiesel Board to Discuss RFS & Biodiesel
Start Date/Time: Wed 5/17/2017 5:00:00 PM
End Date/Time: Wed 5/17/2017 5:30:00 PM
NBB - RFS - RVO - 2018-2019.pptx

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Anne Steckel

Sandra Franco

Tom Hance

Contact:

Tom Hance

Gordley Associates

600 Pennsylvania Avenue, SE, Suite 320

Washington, DC 20003

202-969-8900

thance@gordley.com

2018 RFS AND 2019 BIOMASS-BASED DIESEL BIODIESEL, RENEWABLE DIESEL AND ADVANCED BIOFUELS

Meeting with EPA Office of The Administrator
May 17, 2017



WHO WE ARE

- **U.S. biodiesel and renewable diesel producers, feedstock providers, distributors and marketers – members represent the entire value chain**
- **Biodiesel is produced in plants across the country, from California to Maine**
  - Biodiesel supports jobs throughout the economy
  - Distribution is flexible, available and growing
- **Biodiesel uses a diversity of feedstocks**
  - NBB started by soybean farmers, but has grown to include renderers, used cooking oil, canola oil, etc.…
  - Co-products, by-products and wastes

Biodiesel was the first U.S. commercial-scale advanced biofuel.

EPA MUST CONTINUE TO GROW THE RFS VOLUMES

- **Congress "prioritized" growth "as occurring principally in advanced biofuels" (81 Fed. Reg. at 89,761)**
  - **"Implied" Conventional at 15 billion ethanol-equivalent gallons**

- **2016 RFS**
  - **EPA estimated 2.5 billion gallons total biodiesel and renewable diesel as "maximum" – 80 Fed. Reg. at 77,444**
  - **Biomass-Based Diesel production alone exceeded 2.6 billion (over 4 billion RINs generated)***
  - **RIN Values consistent**

- **2017 RFS**
  - **NBB believed at least 4.75 billion ethanol-equivalent gallons could be easily achieved for Advanced Biofuels**
  - **EPA set at 4.28 billion ethanol-equivalent gallons**
  - **First quarter RIN generation exceeds that of 2016**

The Biomass-Based Diesel Industry Has Responded Every Time.

*Based on EPA EMTS

CERTAINTY IS KEY

- **Timely Issuance of Standards**
  - **We fully appreciate and support EPA's efforts to stay on track from a timing perspective**
- **A Strong Growth Trajectory**
  - **2018 RFS – At least 5.25 billion ethanol-equivalent gallons can be easily achieved for Advanced Biofuels**
    - **Biomass-Based Diesel needed to meet Advanced Biofuels would still be below domestic capacity**
    - **Imports continue to increase and more available, registered capacity**
    - **There is feedstock available**
    - **No limitations on distributing and using B20 throughout the Diesel and Distillate fuel market**
  - **2019 Biomass-Based Diesel – At least 2.75 billion gallons**
    - **Strong growth signals from EPA can provide assurances for continued investment**

Biomass-Based Diesel is providing environmental, economic and energy security benefits sought.

A 2.75 BILLION GALLON D4 MANDATE FOR 2019 WILL NOT UNDERMINE COMPETITION IN ADVANCED BIOFUELS

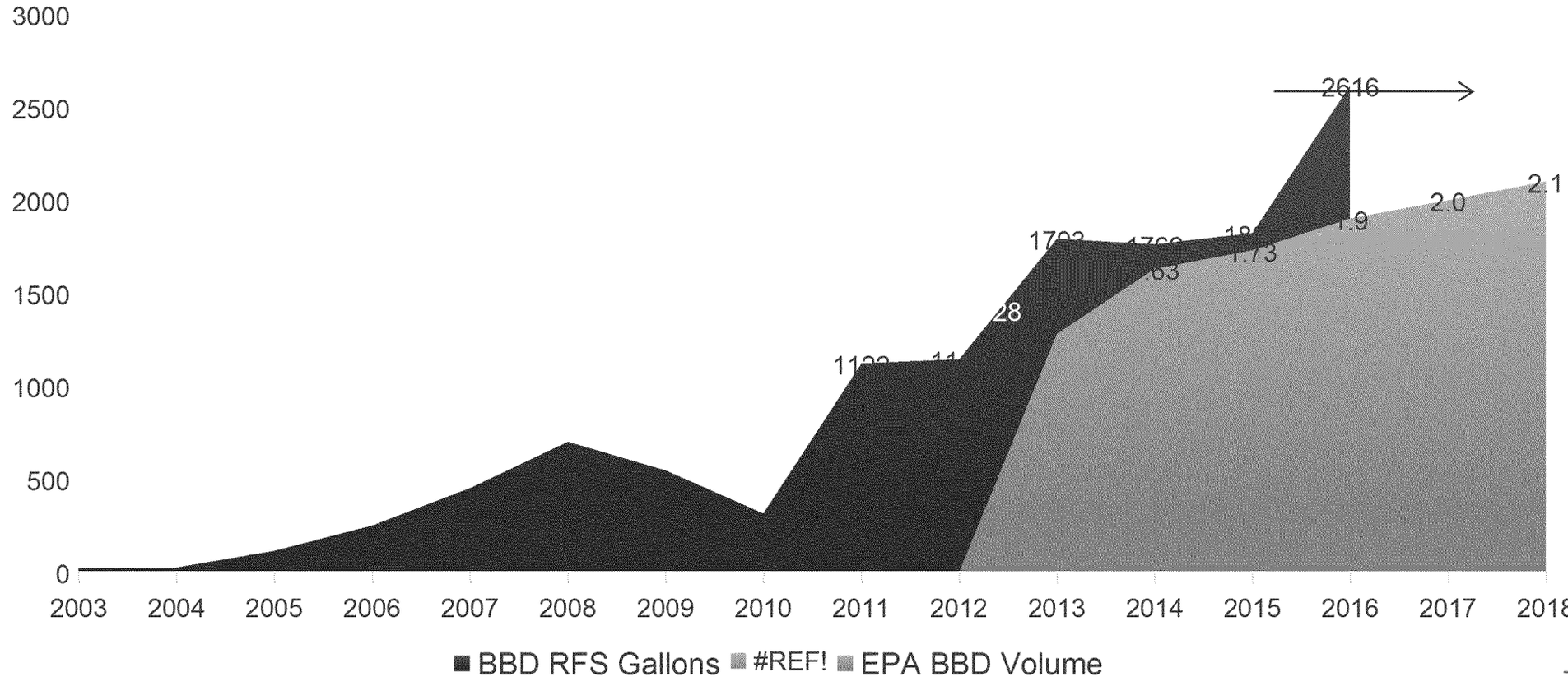
* 2.75 billion gallon BBD mandate supports competition by;
  * Retaining existing unused US capacity (<65% capacity utilization – based on EIA, not counting many closed/idled plants)
  * Expanding and diversifying US biodiesel capacity
  * Promoting additional distribution investments
  * Allowing for lower transportation costs with increased scale
* BBD doesn't compete with other advanced fuels, e.g., cellulosic
  * No "crowding out" effect from increased D4 mandate
  * Supports certainty and increased investment in advanced biofuels
  * Only other commercial-scale advanced biofuel: sugarcane ethanol imports into gasoline market
  * Uses beyond motor vehicles

INDUSTRY OVERVIEW

U.S. Biomass-Based Diesel Market

(millions of gallons)

Source: EPA EMTS (data as of April 10, 2017)

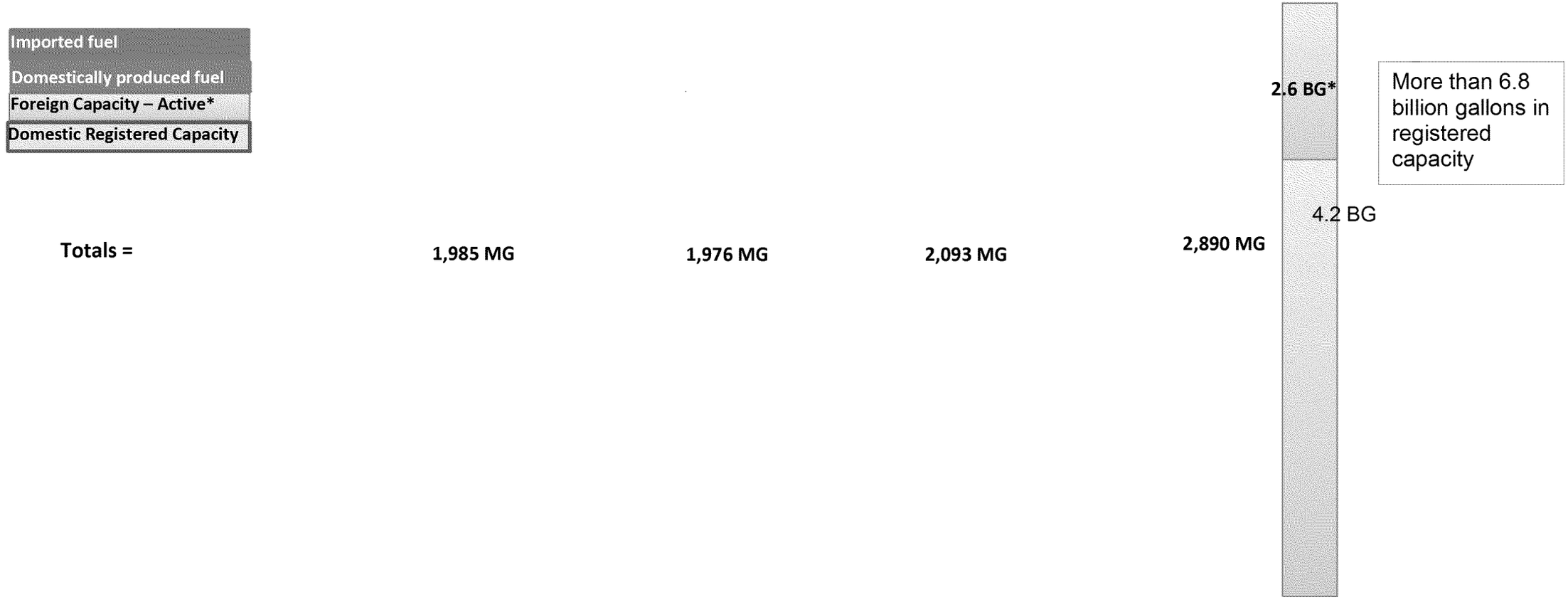


MORE THAN SUFFICIENT AVAILABLE SUPPLY

- **EPA estimates U.S. biodiesel registered capacity at approximately 3.5 billion gallons (81 Fed. Reg. at 89,782)**
- **EPA estimates U.S. renewable diesel registered capacity at approximately 0.7 billion gallons (81 Fed. Reg. at 89,872)**
  - **3.5 plus .7 = 4.2 billion gallons (>6 billion RINs)**
- **Then there's foreign registered production capacity and domestic D5**
  - **Over 4 Billion Gallons in D4 Registered Capacity (Imports discussed later) (as of May 2016)**
  - **Over 4 Billion Ethanol-Equivalent Gallons in D5 Foreign Registered Capacity (Genscape)**
  - **Over 1 Billion Ethanol-Equivalent Gallons in D5 Domestic Capacity (Genscape)**
  - **Almost 800 Million Gallons in D3/D7 Foreign/Domestic Capacity (Genscape)**

Around 18 Billion Potential Available RINs.

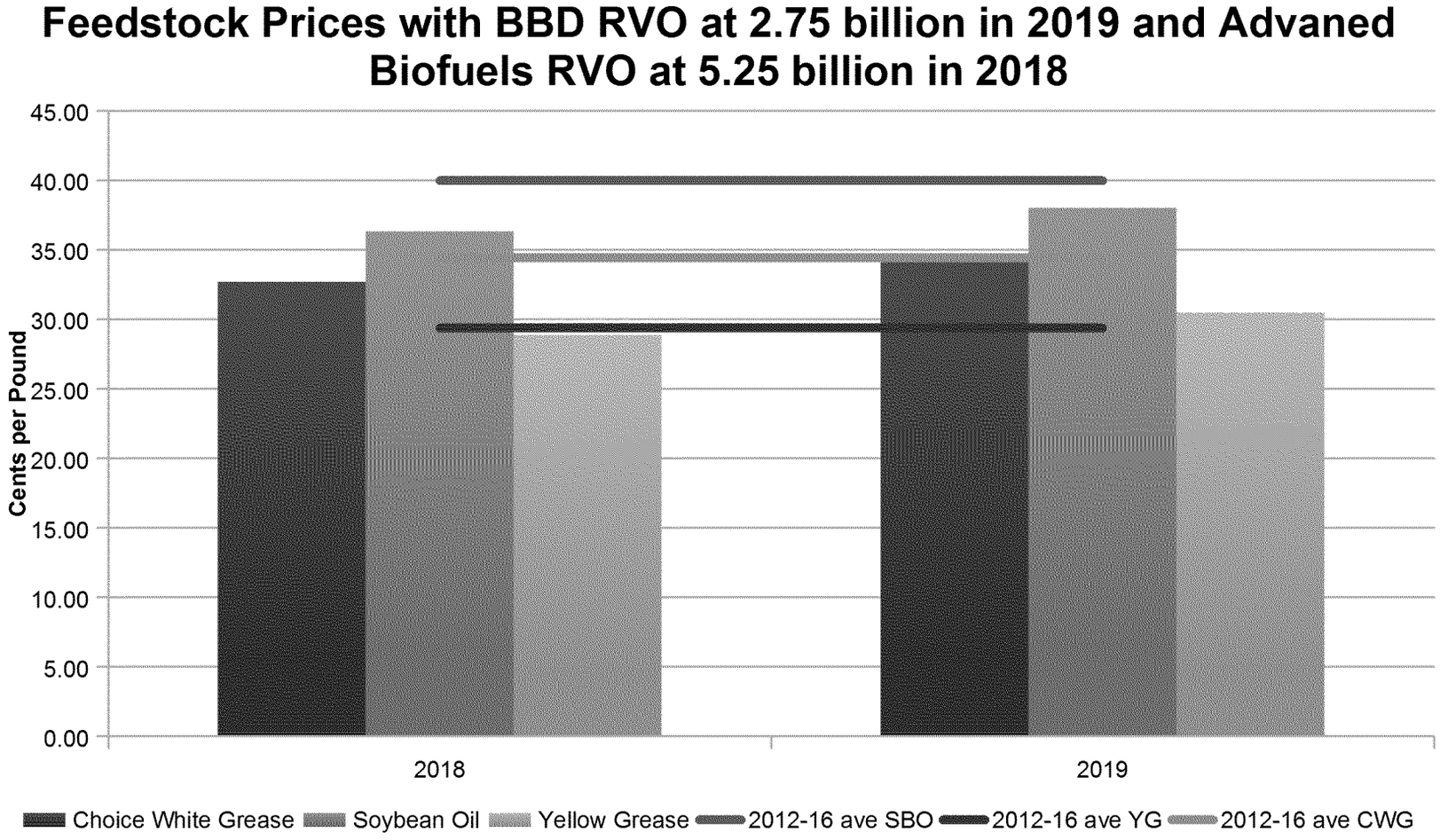
IMPORTS



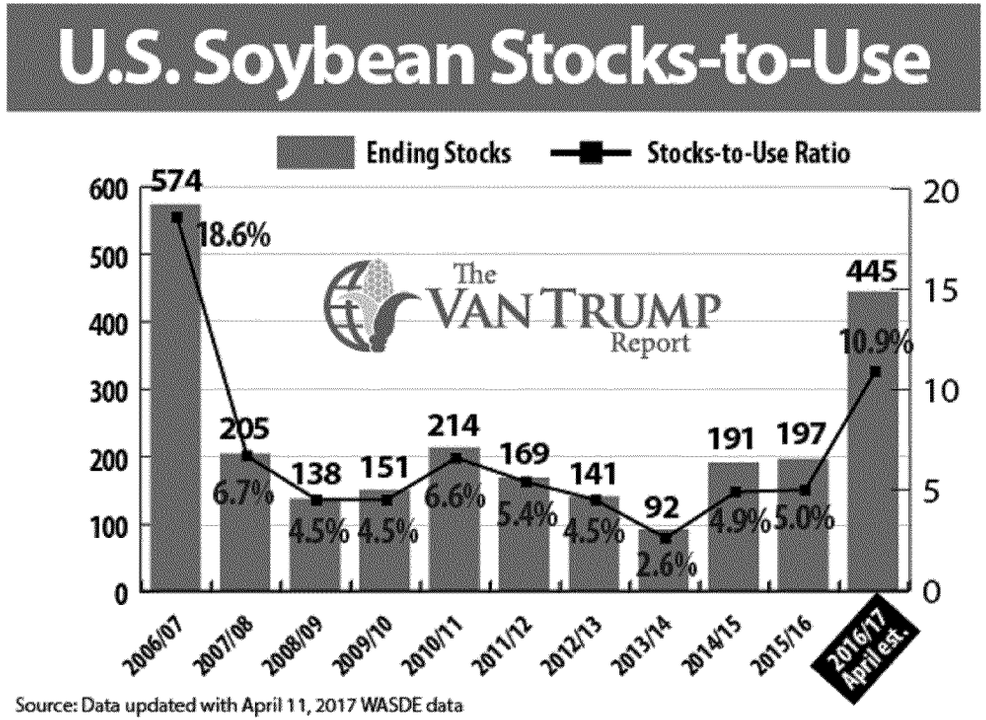
Totals =	**1,985 MG**	**1,976 MG**	**2,093 MG**

Data collected from U.S. EPA EMTS
*From Key Countries

FEEDSTOCK PRICES AT OR BELOW 5 YEAR AVERAGE



MORE THAN SUFFICIENT FEEDSTOCK 2017 TRENDS INDICATE INCREASED RAW MATERIAL SUPPLIES



* Large projected US supplies of vegetable oils
  * Record US soybean acreage in 2017 (Mar Prospective Plantings Report)
  * Stocks to Use ratio projected to be 2x recent years
* Record US meat production (2017 AgOutlook Forum)
* Large South American crop harvested (WASDE)

MORE THAN SUFFICIENT FEEDSTOCK
EXPANSION OF SLAUGHTERING CAPACITY

Pork Packing Capacity Expansion Plans

U.S Packing Capacity Under Construction	Fall 2016		Fall 2017		Fall 2018	
	Daily Hd	Ann Hd	Daily Hd	Ann Hd	Daily Hd	Ann Hd
Pleasant Hope, MO	2,500	625,000	2,500	625,000	2,500	625,000
Windom, MN			4,000	1,000,000	4,000	1,000,000
Sioux City,IA			12,000	3,000,000	12,000*	3,000,000
Coldwater, MI			10,000	2,500,000	10,000	2,500,000
Wright County, IA					10,000	2,500,000
Total	**2,500**	**625,000**	**28,500**	**7,125,000**	**38,500**	**9,625,000**
Head per week		12,019		137,019		185,096
Pct of '15 avg = 2.195 mil.		0.5%		6.2%		8.4%
Pct of '15 max = 2.507 mil.		0.5%		5.5%		7.4%

*This plant could process 20,000 head per day if double-shifted by the end of 2018

Last Updated: 11/2/16

People. Pigs. Planet.℠

pork checkoff

MORE THAN SUFFICIENT FEEDSTOCK EXPANSION OF OILSEED PROCESSING CAPACITY

* Recent Headlines
  * Ag Processing Inc. to Construct Soybean Processing Plant in South Dakota—Dec 12, 2016
  * Zeeland Farm Services building second soybean facility in Ithaca —October 5, 2016
  * Minnesota Soybean Processors to pursue ND soybean processing plant —Feb 8, 2017

THANK YOU!

- **2018 Advanced Biofuel**
  = at least 5.25 billion gallons

- **2019 Biomass-based Diesel Volume**
  = at least 2.75 billion gallons

NATIONAL BIODIESEL® BOARD

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Venable: EPA's Burden Reduction/Smart Sector Initiatives
Start Date/Time: Tue 1/23/2018 4:00:00 PM
End Date/Time: Tue 1/23/2018 4:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: The topic for discussion, which affects the wide range of business interests, involves a modification to EPA's rules prescribing the types of secondary materials that can be recycled as legitimate fuels or ingredients in boilers and combustion devices in lieu of the use of virgin materials (commonly referred to as EPA's rules for identifying "Non-Hazardous Secondary Materials that are Solid Wastes when Combusted" or the "NHSM rule," set forth at 40 C.F.R. Part 241).

Contact:

Douglas H. Green, Esq. | Venable LLP
t 202.344.4483 | f 202.344.8300 | m 202.716.1789
600 Massachusetts Avenue, NW, Washington, DC 20001

From: Milhouse, Gloria
Location: HQ-Room-WJCE-1153-150pp
Importance: Normal
Subject: Retirement Celebration for Wendy Cleland-Hamnett
Start Date/Time: Tue 8/15/2017 7:00:00 PM
End Date/Time: Tue 8/15/2017 9:00:00 PM
Wendy's Retirement Party rev.JPG

Please Note! A new location change from the Green Room to "WJC -East-Conference Room 1153" at 3PM.

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Marathon Petroleum
Start Date/Time: Tue 5/9/2017 8:00:00 PM
End Date/Time: Tue 5/9/2017 8:30:00 PM
20170505 EPA RIN Value Pass Through and with POO Moved May 9 Meeting.pptx
20170509 EPA Logistics Overview.pptx

Materials include:

2 attachments

http://stillwaterassociates.com/crack-spread-a-quick-and-dirty-indicator-of-refining-profitability.

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

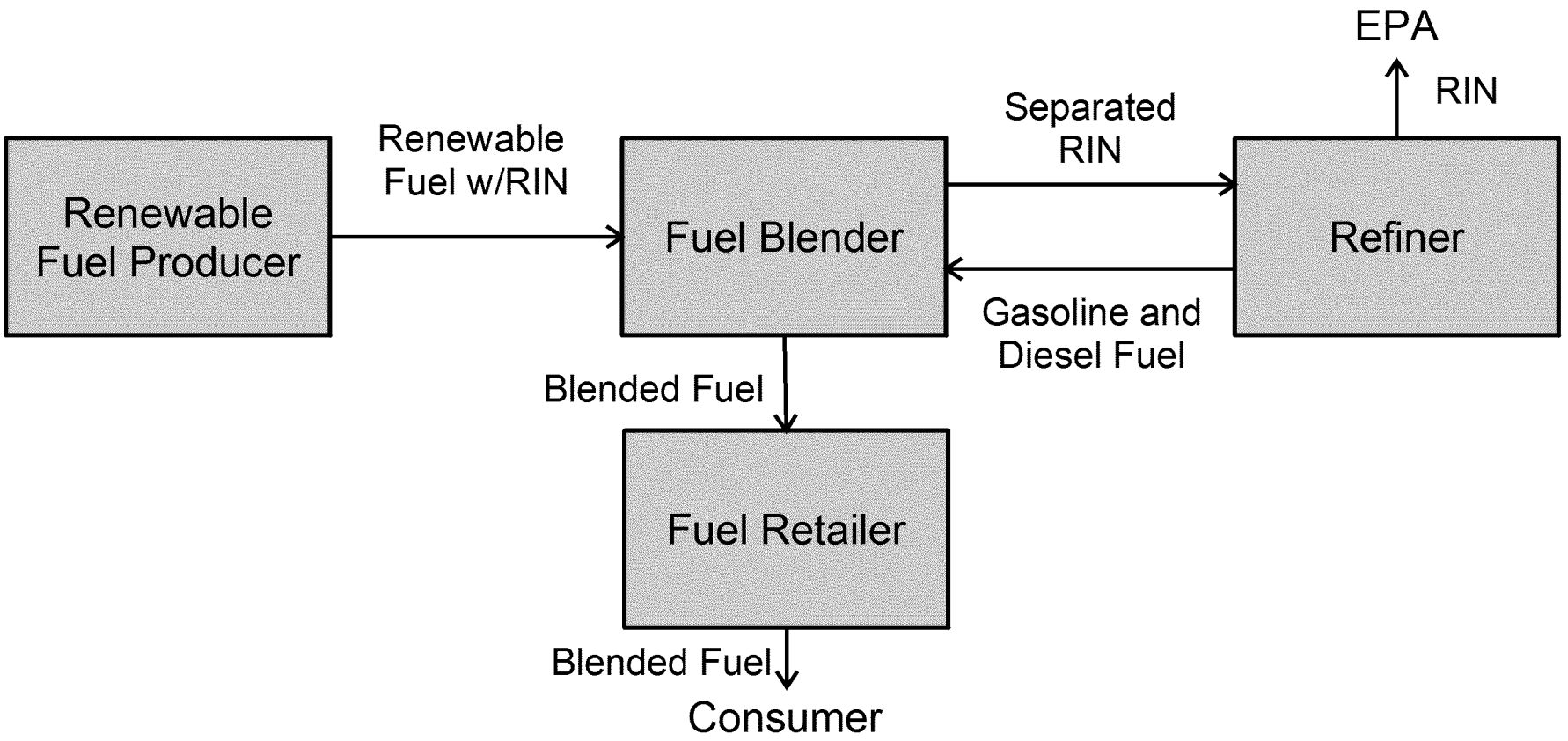
EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: Dave Whikehart, our VP of Environment, Safety and Corporate Affairs, returning to town next week will stop in to go through the RIN and RIN value flow charts and will cover other topics as well.

Contact: mjbirsic@marathonpetroleum.com;

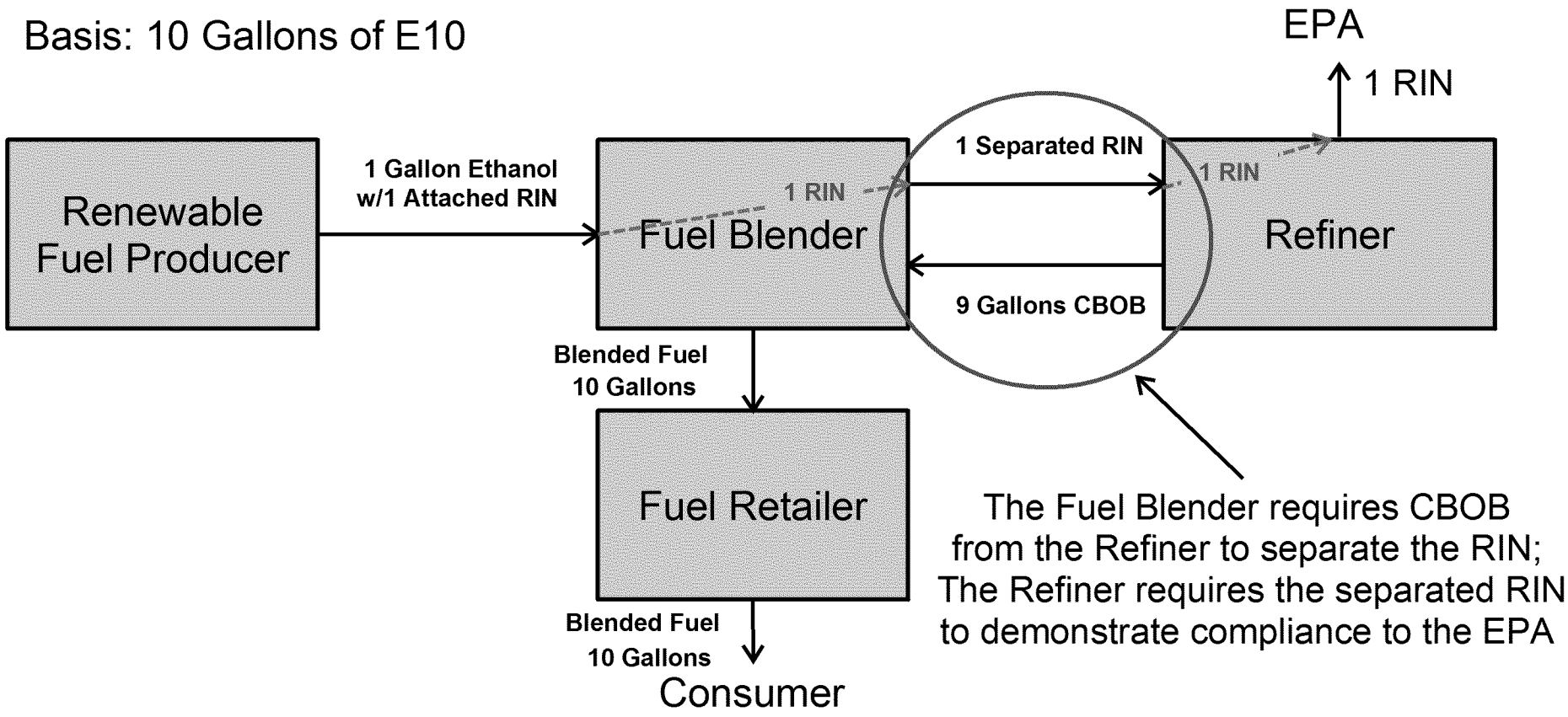
RIN Demand

Refiner as Obligated Party



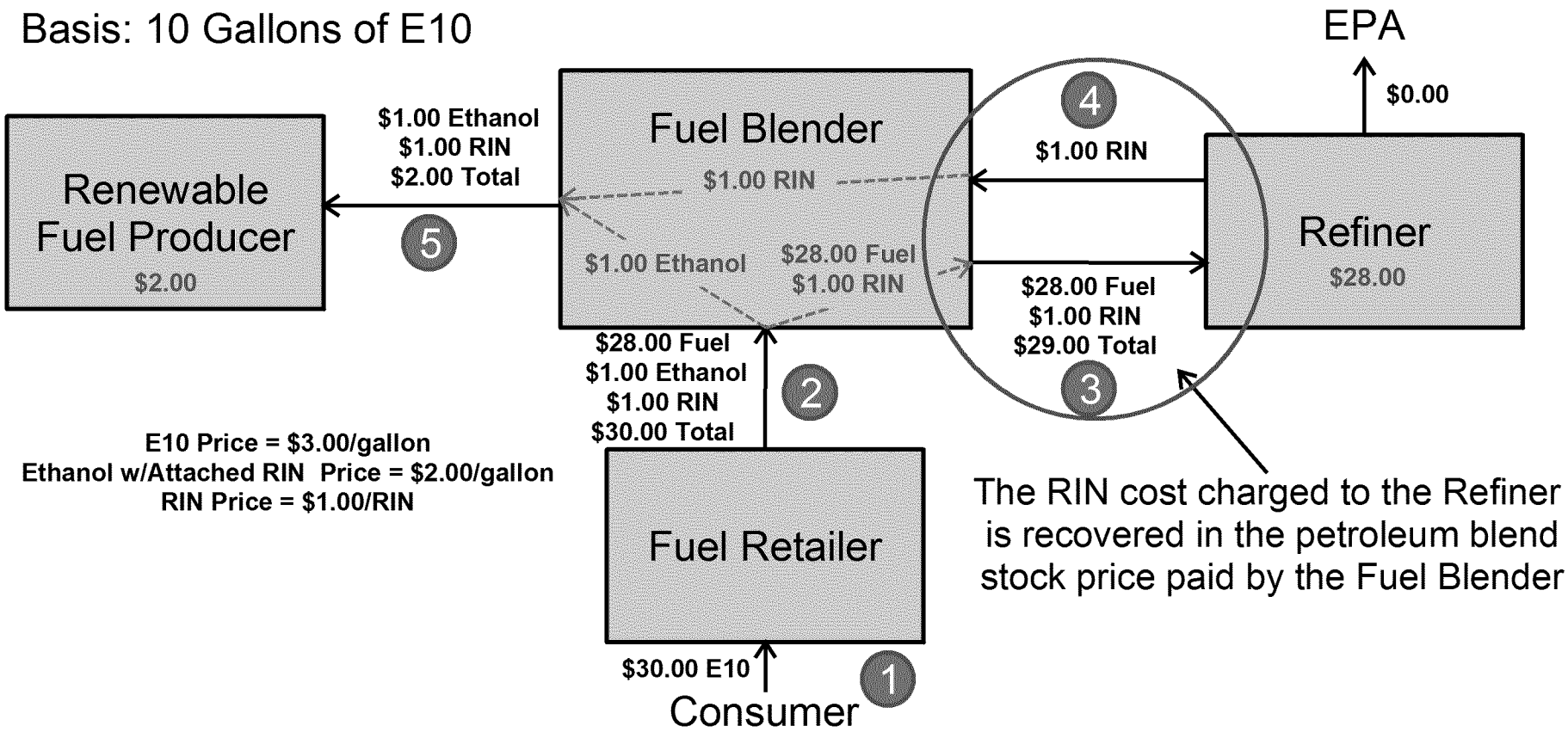
The EPA demands RINs from the <u>Refiner</u> which creates the demand for renewable fuel blending

Physical RIN/Fuel Flow
Refiner as Obligated Party



RIN flow connects the Renewable Fuel Producer, the Fuel Blender, and the Refiner to the EPA

RIN Value Flow
Refiner as Obligated Party



The Consumer pays for the RIN value which then passes through the Fuel Blender and Refiner to ultimately subsidize the Renewable Fuel Producer

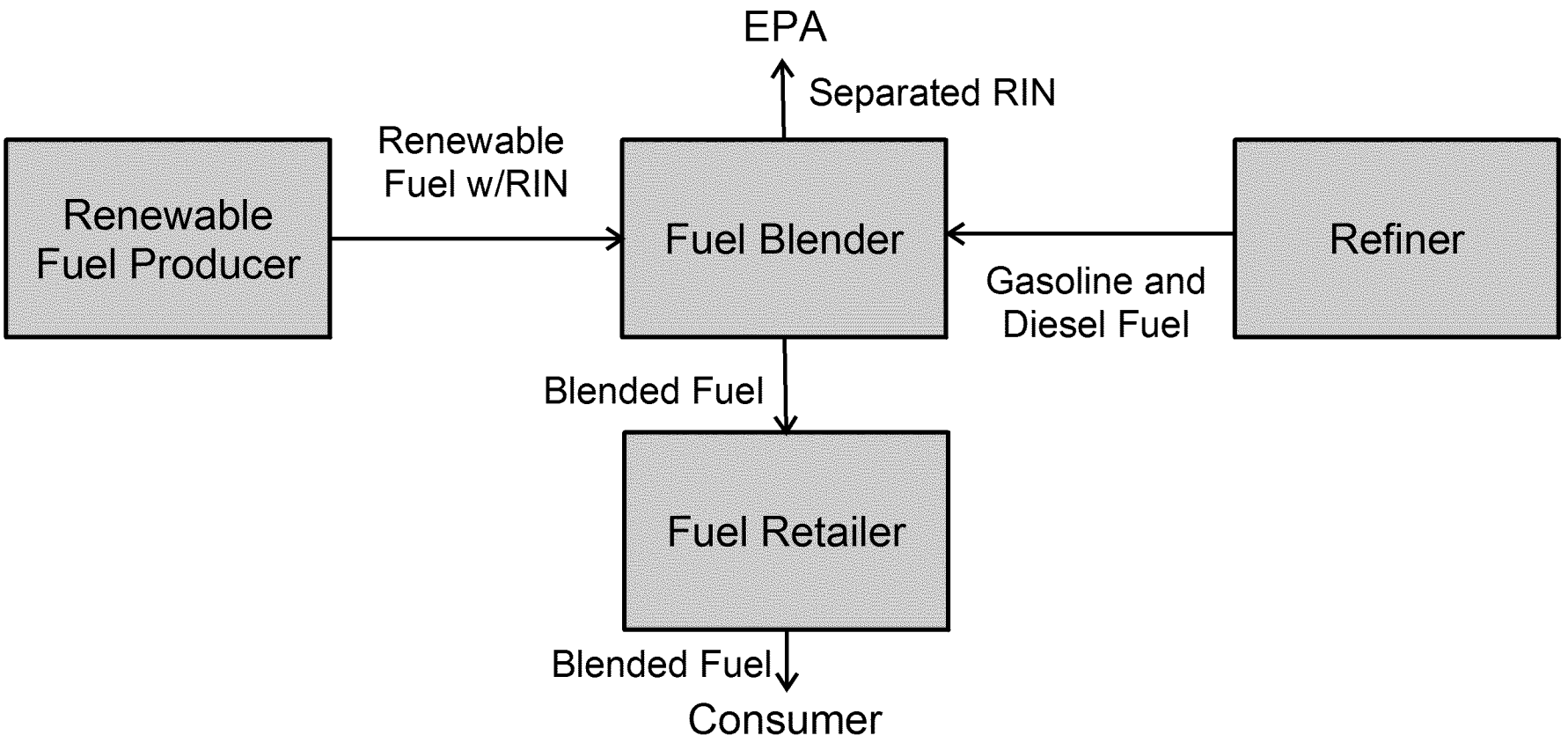
RIN Pass Through Sequence

Refiner as Obligated Party

Step #	Value Flow	Physical Flow	Comments
1	Consumer pays total fuel cost to Fuel Retailer	Consumer receives blended fuel from Fuel Retailer	Total fuel cost includes the cost of the petroleum fuel blend stock, ethanol, and the RIN
2	Fuel Retailer passes total fuel cost to Fuel Blender	Fuel Retailer receives blended fuel from Fuel Blender	Fuel Retailer passes through the RIN value to the Fuel Blender
3	Fuel Blender pays petroleum fuel blend stock and RIN cost to Refiner	Fuel Blender receives petroleum fuel blendstock from Refiner	Refiner receives the petroleum fuel blendstock value
4	Refiner pays RIN cost to Fuel Blender	Refiner receives RIN from Blender	Refiner remits RIN to the EPA
5	Fuel Blender pays ethanol and RIN cost to Renewable Fuel Producer	Fuel Blender receives ethanol with attached RIN	Renewable Fuel Blender receives the ethanol value and the RIN value (as a subsidy)

RIN Demand

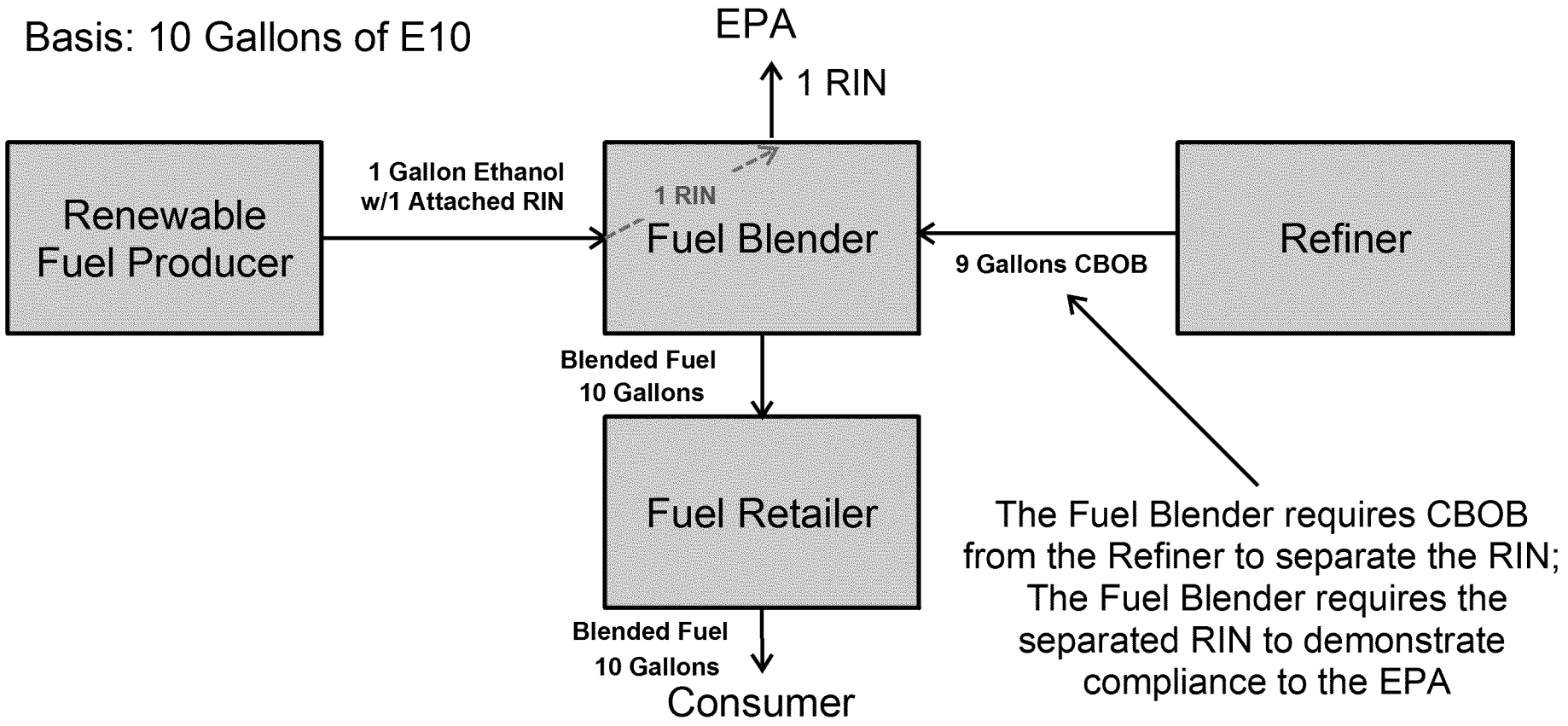
Fuel Blender as Obligated Party



The EPA demands RINs from the Fuel Blender which creates the demand for renewable fuel blending

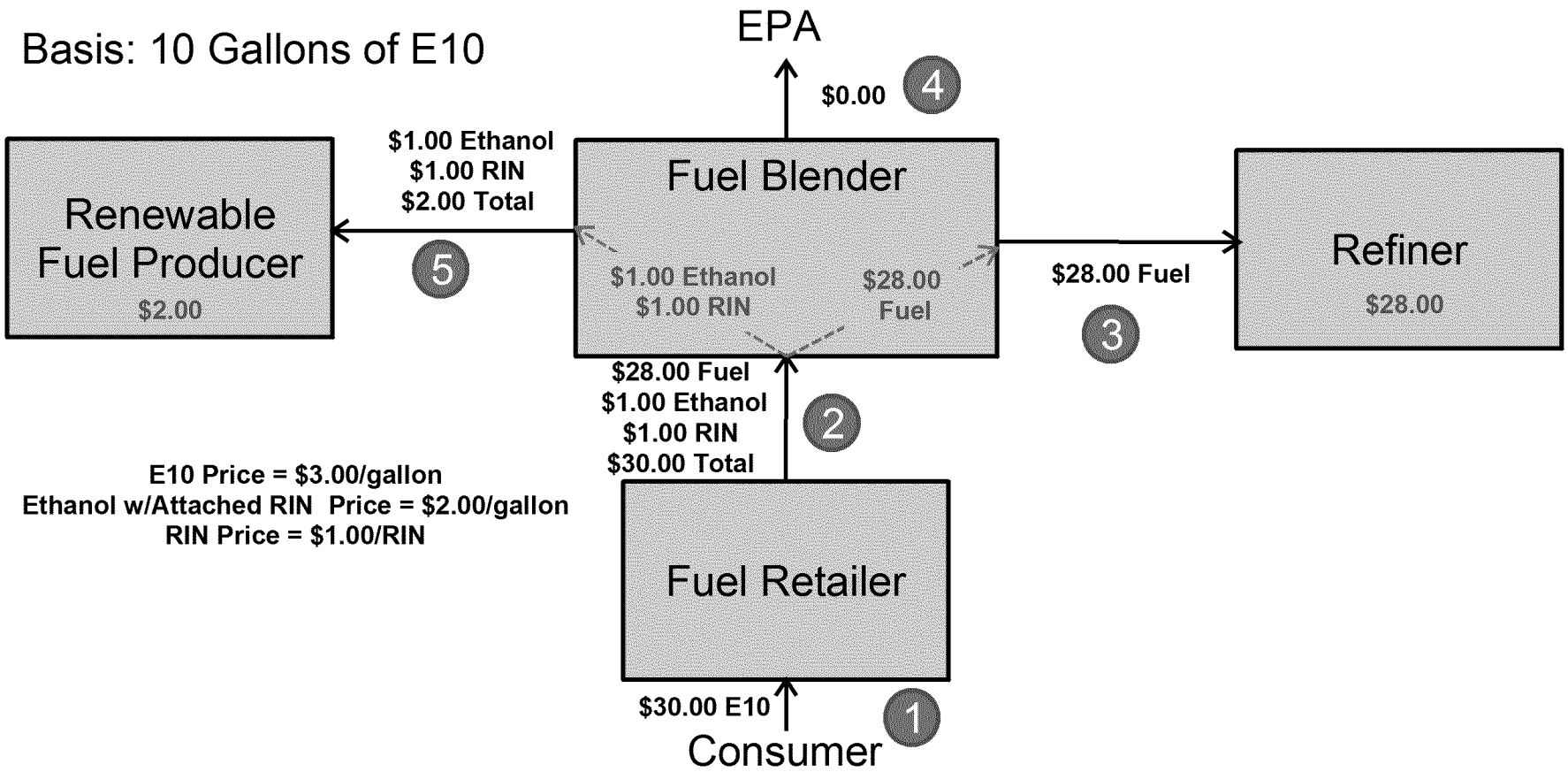
Physical RIN/Fuel Flow

Fuel Blender as Obligated Party



RIN flow connects only the Renewable Fuel Producer and the Fuel Blender to the EPA

RIN Value Flow
Fuel Blender as Obligated Party



The Consumer pays for the RIN value which then passes through the Fuel Blender to subsidize the Renewable Fuel Producer

RIN Pass Through Sequence

Fuel Blender as Obligated Party

Step #	Value Flow	Physical Flow	Comments
1	Consumer pays total fuel cost to Fuel Retailer	Consumer receives blended fuel from Fuel Retailer	Total fuel cost includes the cost of the petroleum fuel blend stock, ethanol, and the RIN
2	Fuel Retailer passes total fuel cost to Fuel Blender	Fuel Retailer receives blended fuel from Fuel Blender	Fuel Retailer passes through the RIN value to the Fuel Blender
3	Fuel Blender pays petroleum fuel blend stock to Refiner	Fuel Blender receives petroleum fuel blendstock from Refiner	Refiner receives the petroleum fuel blendstock value
4	No RIN value flows to the EPA	Fuel Blender remits RIN to the EPA	
5	Fuel Blender pays ethanol and RIN cost to Renewable Fuel Producer	Fuel Blender receives ethanol with attached RIN	Renewable Fuel Producer receives the ethanol value and the RIN value (as a subsidy)

RIN Pass Through Sequence
Comparison

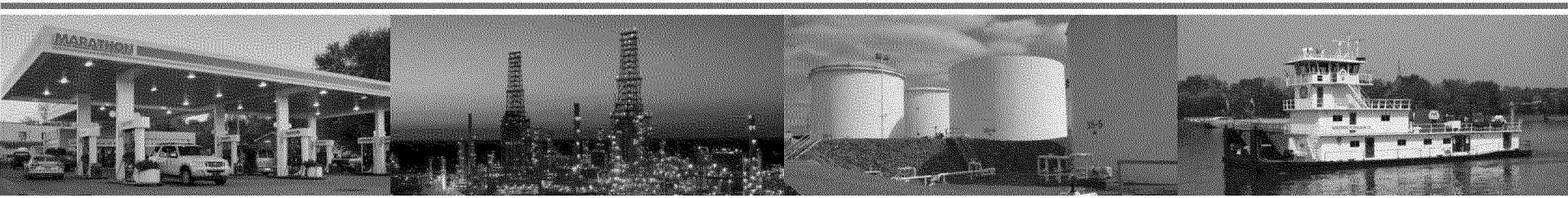
	Refiner Obligated	Blender Obligated	Comments
Consumer	Consumer pays total fuel cost to Fuel Retailer	Consumer pays total fuel cost to Fuel Retailer	No Physical Impact No RIN Value impact
Fuel Retailer	Fuel Retailer passes total fuel cost to Fuel Blender	Fuel Retailer passes total fuel cost to Fuel Blender	No Physical Impact No RIN Value Impact
Fuel Blender	Fuel Blender pays petroleum fuel blend stock plus RIN cost to Refiner and ethanol and RIN cost to Renewable Fuel Producer Fuel Blender separates physical RIN Fuel Blender receives RIN Value from Refiner in exchange for physical RIN	Fuel Blender pays petroleum fuel blend stock cost to Refiner and ethanol and RIN cost to Renewable Fuel Producer Fuel Blender separates physical RIN Fuel Blender remits RIN to EPA	No Net Physical Impact No Net RIN Value Impact
Refiner	Refiner supplies petroleum fuel blendstock and receives petroleum blendstock value plus RIN value Refiner pays RIN value to Fuel Blender in exchange for physical RIN Refiner remits RIN to EPA	Refiner supplies petroleum fuel blendstock and receives petroleum fuel blendstock value	No Net Physical Impact No Net RIN Value Impact
Renewable Fuel Producer	Renewable Fuel Producer supplies ethanol with attached RIN and receives ethanol and RIN value	Renewable Fuel Producer supplies ethanol with attached RIN and receives ethanol and RIN value	No Physical Impact No RIN Value impact

EPA Logistics Overview

May 9, 2017

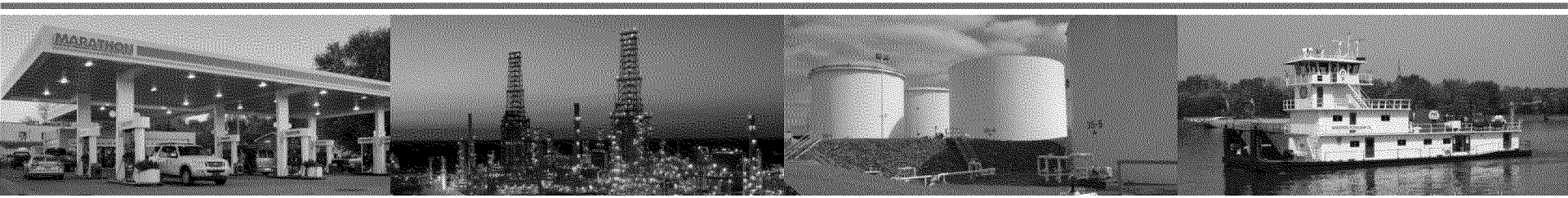
Fred Walas, PE

Marathon Petroleum Company LP

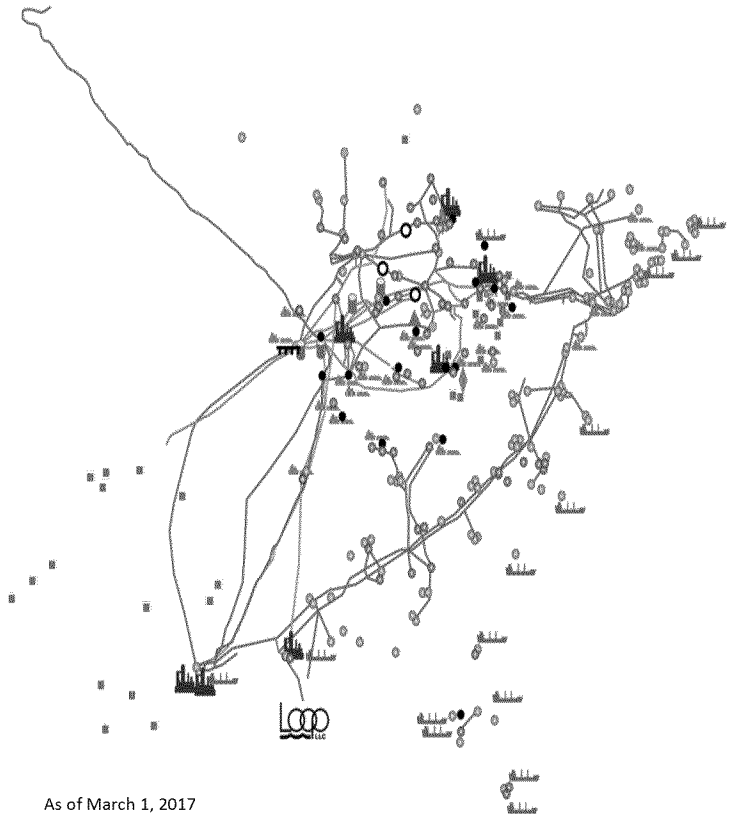


MPC Overview

Marathon Petroleum Company LP



MPC's Fully Integrated Downstream System



As of March 1, 2017

Refining and Marketing

- Seven-plant refining system with ~1.8 MMBPCD capacity
- One biodiesel facility and interest in three ethanol facilities
- One of the largest wholesale suppliers in our market area
- One of the largest producers of asphalt in the U.S.
- ~5,500 Marathon Brand retail outlets across 19 states
- Owns/operates 20 asphalt/light product terminals, while utilizing third-party terminals at 121 light product and two asphalt locations
- 2,074 owned/leased railcars, 163 owned transport trucks

Speedway

- ~2,730 locations in 21 states
- Second-largest U.S. owned/operated c-store chain

Midstream (including MPLX)

- Owns, leases or has interest in ~10,800 miles of crude and refined product pipelines
- 62 light product terminals with ~24 million barrels of storage capacity
- 18 owned inland waterway towboats more than 200 owned and 18 leased barges
- Owns/operates over 5,600 miles of gas gathering and NGL pipelines
- Owns/operates 55 gas processing plants, 14 NGL fractionation facilities and two condensate stabilization facilities

MARATHON

Marketing Area

MPC Refineries

Light Product Terminals

MPC Owned and Part-owned

Third Party

Asphalt/Heavy Oil Terminals

MPC Owned

Third Party

Water Supplied Terminals

Coastal

Inland

Pipelines

MPC Owned & Operated

MPC Interest: Operated by MPC

MPC Interest: Operated by Others

Pipelines Used by MPC

Renewable Fuels

Ethanol Facility

Biodiesel Facility

MPLX ENERGY LOGISTICS

MPLX Terminals: Owned and Part-owned

MPLX Pipelines: Owned & Operated

MPLX Interest Pipelines: Operated by Others

Tank Farms

Cavern

Barge Dock

MarkWest Complex

MARATHON

Rated Crude Oil Refining Capacity

System capacity: 1,817,000 BPCD



Garyville, Louisiana
543,000 BPCD



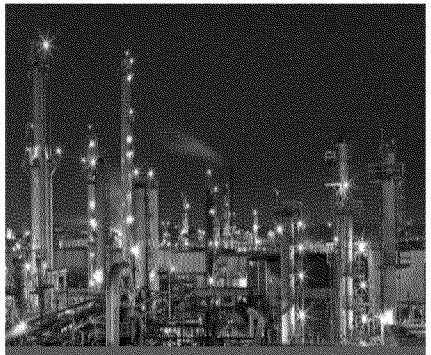
Galveston Bay, Texas
459,000 BPCD



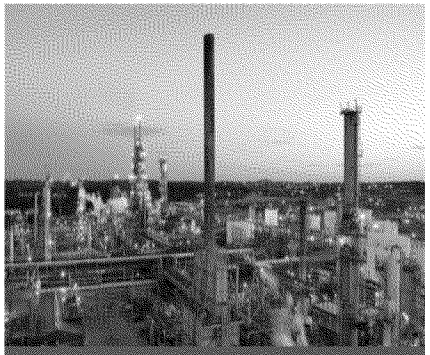
Catlettsburg, Kentucky
273,000 BPCD



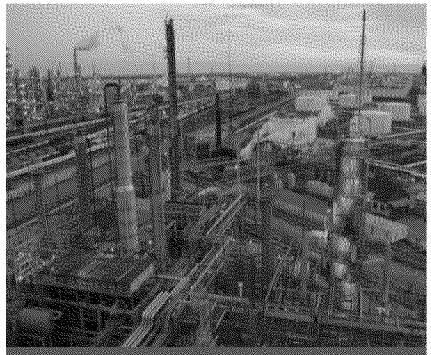
Robinson, Illinois
231,000 BPCD



Detroit, Michigan
132,000 BPCD



Canton, Ohio
93,000 BPCD



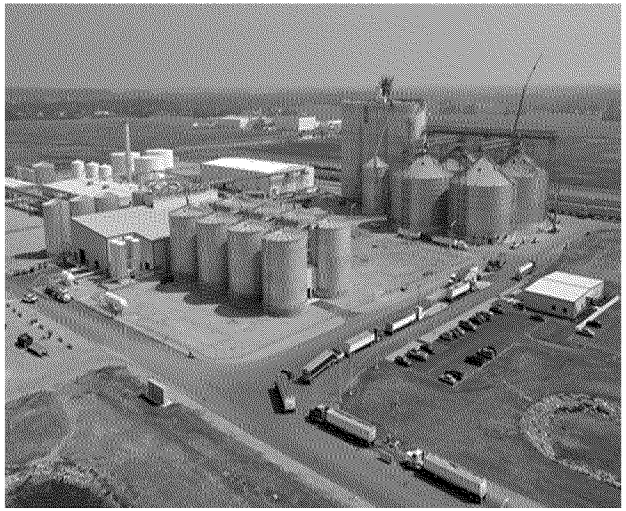
Texas City, Texas
86,000 BPCD

As of Jan. 1, 2017
BPCD = barrels per calendar day

17cv01906 Sierra Club v. EPA
ED_001523_00005597-00004

Renewable Fuels

- Corn Ethanol Plants
  - 67% equity interest* in Greenville, Ohio
    - 110 MM gallon/year capacity
  - 61.1% equity interest in Clymers, Indiana
    - 110 MM gallon/year capacity
  - 44.7% equity interest in Albion, Michigan
    - 55 MM gallon/year capacity
  - The Andersons Inc. operates the plants and provides all the facility services
- Biodiesel Refinery
  - 100% owner in Cincinnati, Ohio
  - ~60 MM gallon/year capacity
  - Generates ~90 MM RINs per year
  - Supplied by both truck and rail, with river access in close proximity



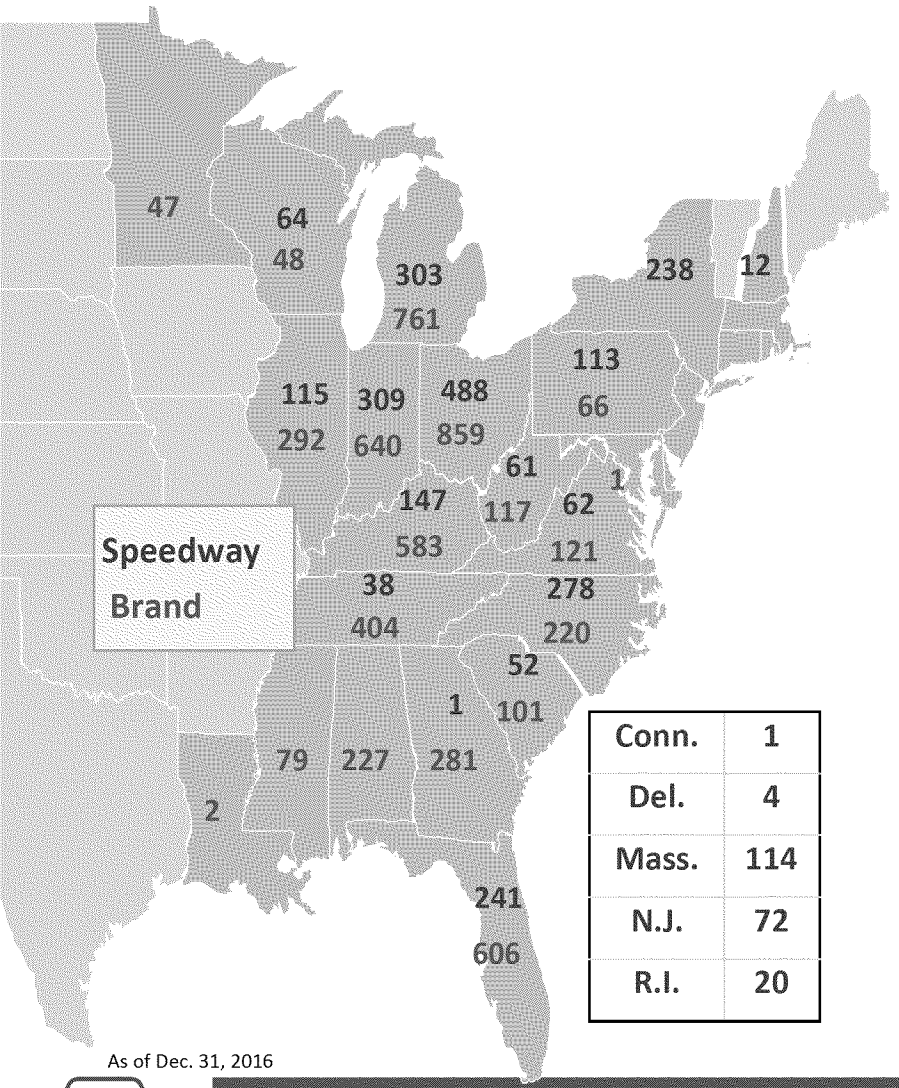


*Direct and indirect

17cv01906 Sierra Club v. EPA

ED_001523_00005597-00005

Extensive Retail Network



Conn.	1
Del.	4
Mass.	114
N.J.	72
R.I.	20

Speedway

- Largest company-owned and -operated c-store chain east of the Mississippi
- ~2,730 locations in 21 states

Marathon Brand

- ~5,500 branded locations
- One of the largest asphalt marketers in the country
- Quality supplier into wholesale and secondary product markets

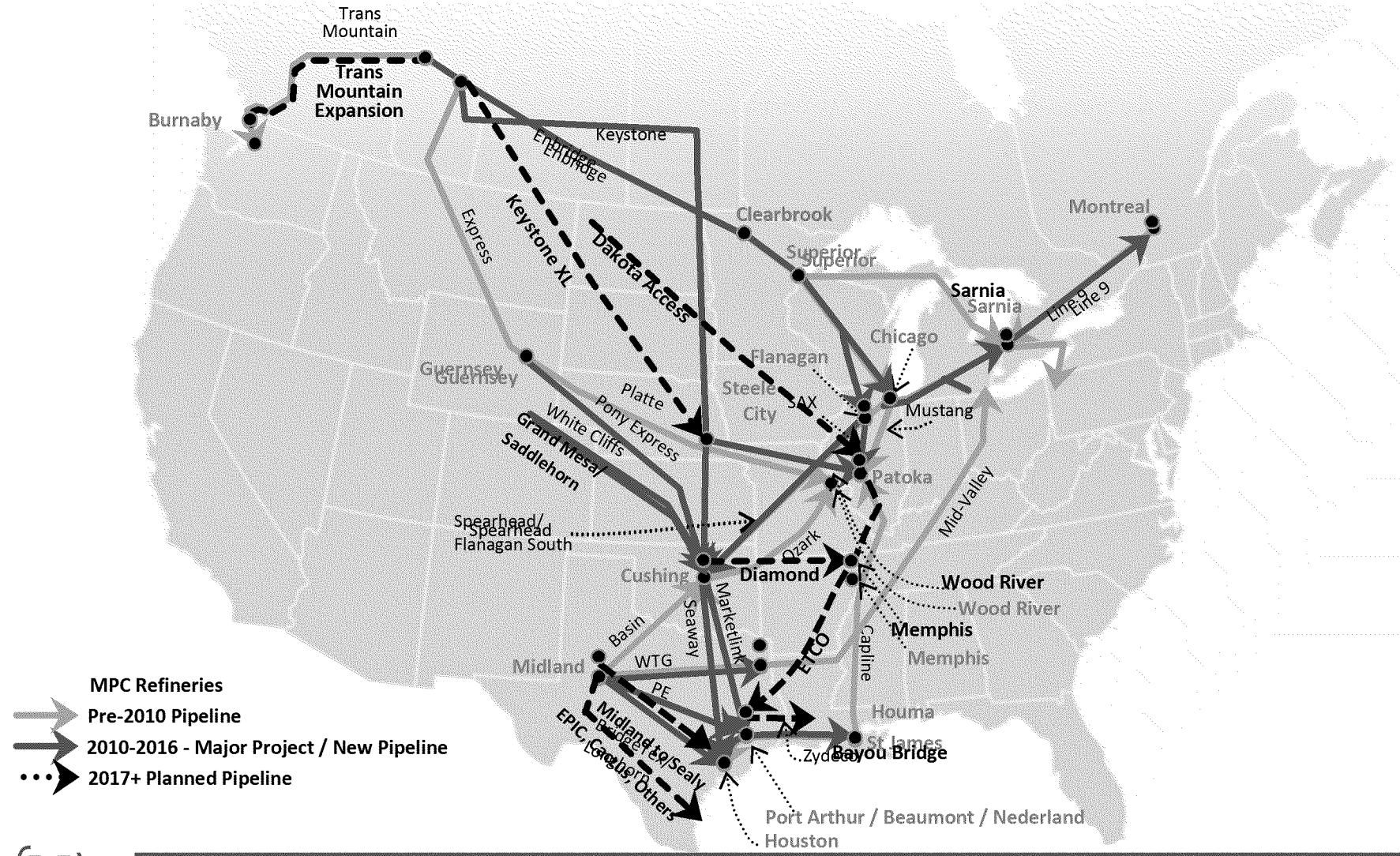
As of Dec. 31, 2016

17cv01906 Sierra Club v. EPA

ED_001523_00005597-00006

Crude Oil Supply and Logistics

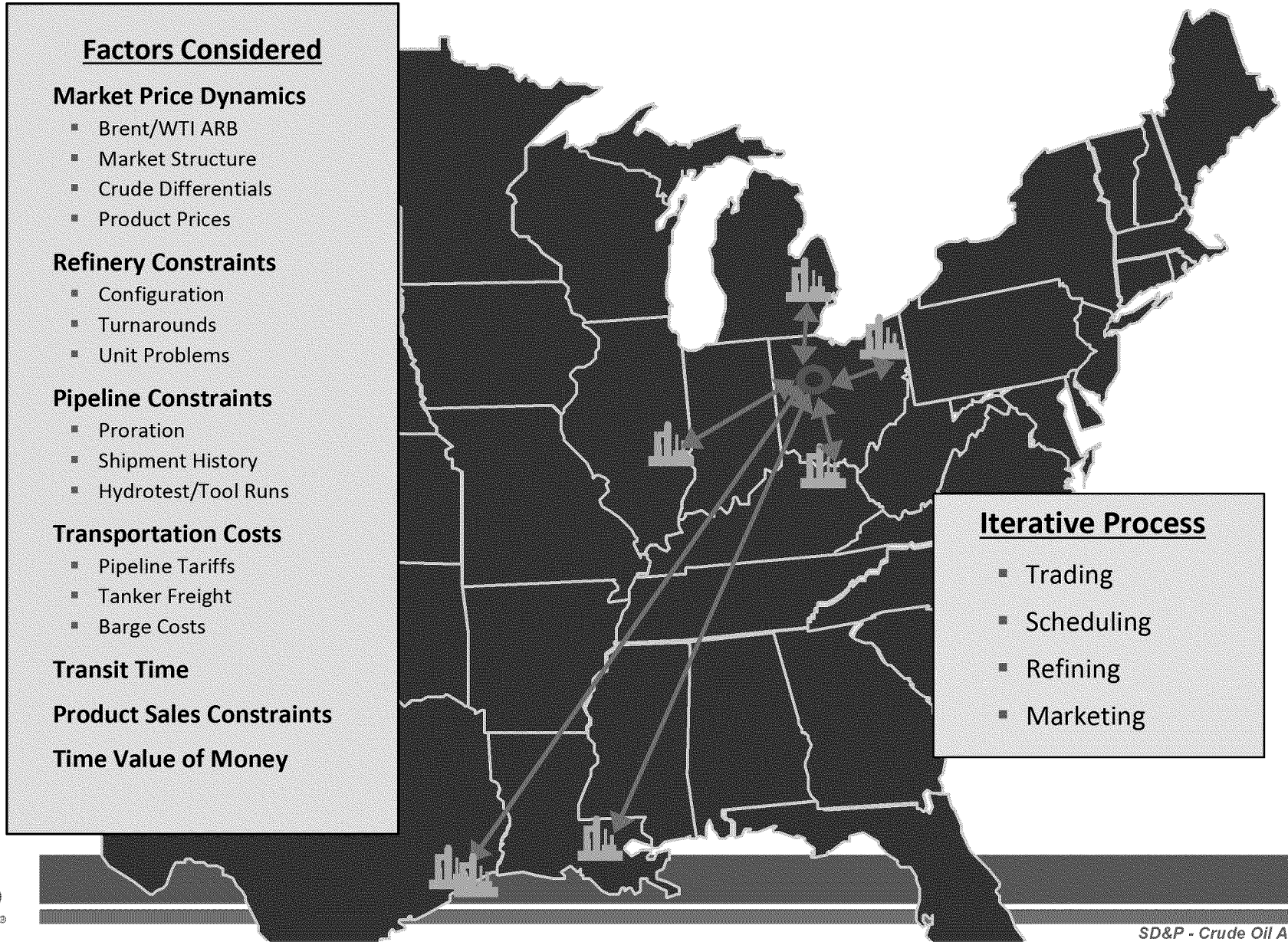
Shale Boom Result - Key U.S. & Canadian Pipelines



17cv01906 Sierra Club v. EPA

ED_001523_00005597-00008

Crude Slate Optimization



Factors Considered

Market Price Dynamics
- Brent/WTI ARB
- Market Structure
- Crude Differentials
- Product Prices

Refinery Constraints
- Configuration
- Turnarounds
- Unit Problems

Pipeline Constraints
- Proration
- Shipment History
- Hydrotest/Tool Runs

Transportation Costs
- Pipeline Tariffs
- Tanker Freight
- Barge Costs

Transit Time

Product Sales Constraints

Time Value of Money

Iterative Process

- Trading
- Scheduling
- Refining
- Marketing

17cv01906 Sierra Club v. EPA

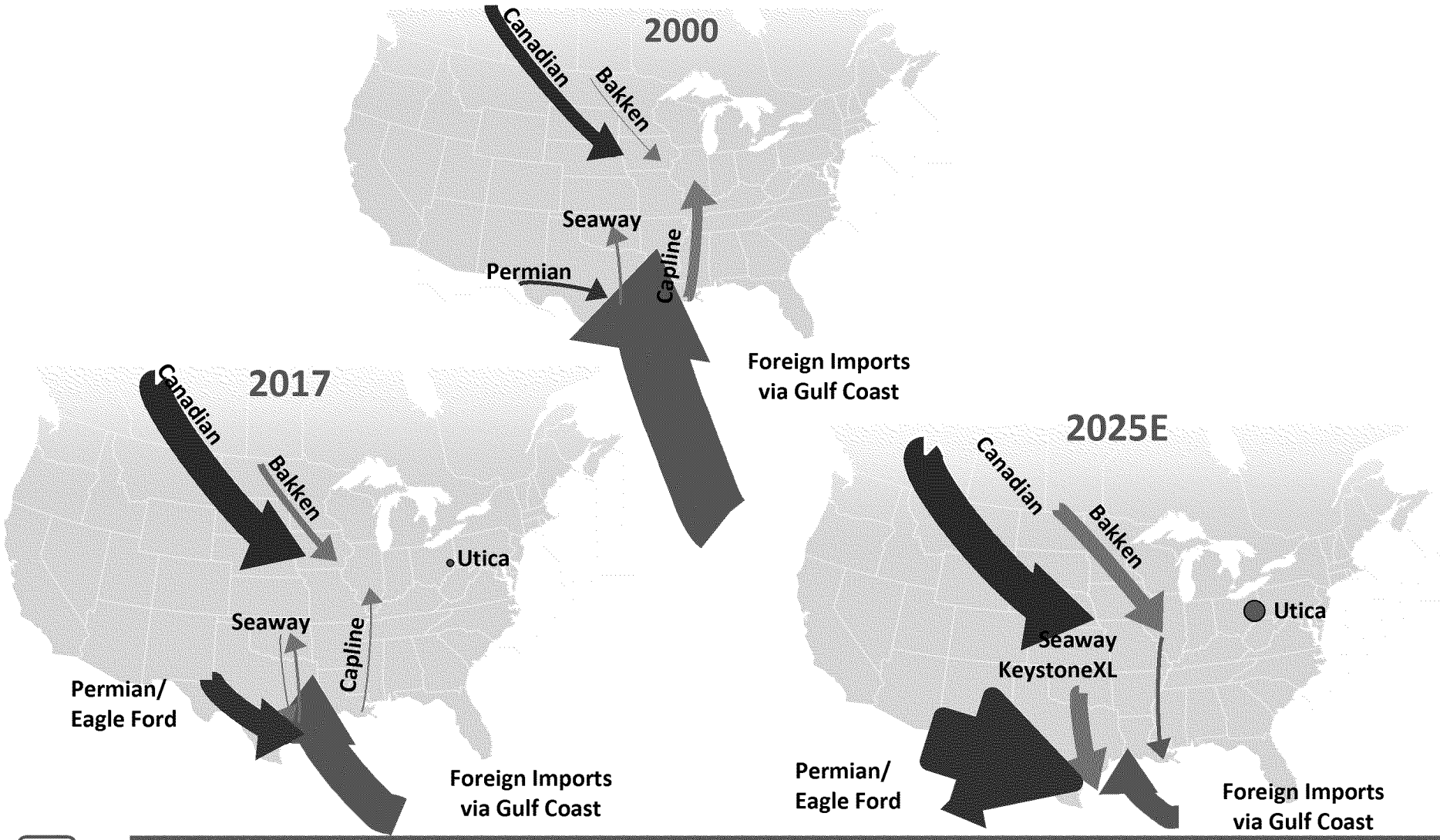
ED_001523_00005597-00009

Trivia Questions

- What were the top 5 oil producing countries in the world in **2016**?
  1. Russia (10.6 MMBD)
  2. Saudi Arabia (10.5 MMBD)
  3. United States (8.9 MMBD)
  4. Iraq (4.5 MMBD)
  5. Iran (4.0 MMBD)
- What is the projected top 5 oil producing countries in **2020**?
  6. Saudi Arabia (10.5 MMBD)
  7. Russia (10.4 MMBD)
  8. United States (10.2 MMBD)
  9. Iraq (4.5 MMBD)
  10. China (4.1 MMBD)

Source: EIA, IEA

Crude Oil Flow Changes (2000 vs. 2017 vs. 2025E)



Light Product Supply and Logistics

17cv01906 Sierra Club v. EPA

ED_001523_00005597-00012

U.S. Refineries and Product Pipelines

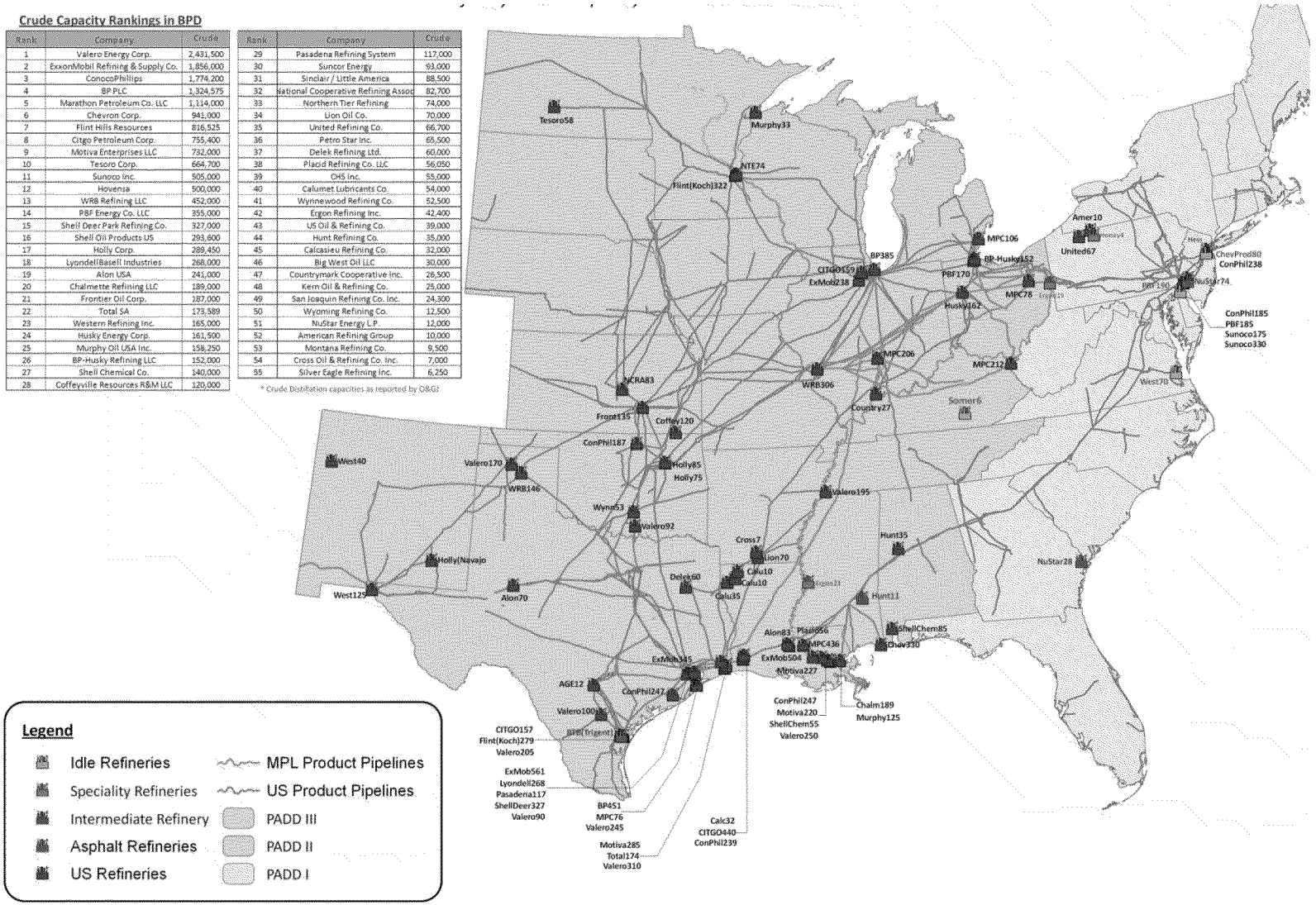
Refinery Crude Capacity in MBPD based on O&GJ

Crude Capacity Rankings in BPD

Rank	Company	Crude
1	Valero Energy Corp.	2,431,500
2	ExxonMobil Refining & Supply Co.	1,856,000
3	ConocoPhillips	1,774,200
4	BP PLC	1,324,575
5	Marathon Petroleum Co. LLC	1,114,000
6	Chevron Corp.	941,000
7	Flint Hills Resources	816,525
8	Citgo Petroleum Corp.	755,400
9	Motiva Enterprises LLC	732,000
10	Tesoro Corp.	664,700
11	Sunoco Inc.	505,000
12	Hovensa	500,000
13	WRB Refining LLC	452,000
14	PBF Energy Co. LLC	355,000
15	Shell Deer Park Refining Co.	327,000
16	Shell Oil Products US	293,600
17	Holly Corp.	289,450
18	LyondellBasell Industries	268,000
19	Alon USA	241,000
20	Chalmette Refining LLC	189,000
21	Frontier Oil Corp.	187,000
22	Total SA	173,589
23	Western Refining Inc.	165,000
24	Husky Energy Corp.	161,500
25	Murphy Oil USA Inc.	158,250
26	BP-Husky Refining LLC	152,000
27	Shell Chemical Co.	140,000
28	Coffeyville Resources R&M LLC	120,000

Rank	Company	Crude
29	Pasadena Refining System	117,000
30	Suncor Energy	93,000
31	Sinclair / Little America	88,500
32	National Cooperative Refining Assoc	82,700
33	Northern Tier Refining	74,000
34	Lion Oil Co.	70,000
35	United Refining Co.	66,700
36	Petro Star Inc.	65,500
37	Delek Refining Ltd.	60,000
38	Placid Refining Co. LLC	56,050
39	CHS Inc.	55,000
40	Calumet Lubricants Co.	54,000
41	Wynnewood Refining Co.	52,500
42	Ergon Refining Inc.	42,400
43	US Oil & Refining Co.	39,000
44	Hunt Refining Co.	35,000
45	Calcasieu Refining Co.	32,000
46	Big West Oil LLC	30,000
47	Countrymark Cooperative Inc.	26,500
48	Kern Oil & Refining Co.	25,000
49	San Joaquin Refining Co. Inc.	24,300
50	Wyoming Refining Co.	12,500
51	NuStar Energy L.P.	12,000
52	American Refining Group	10,000
53	Montana Refining Co.	9,500
54	Cross Oil & Refining Co. Inc.	7,000
55	Silver Eagle Refining Inc.	6,250

* Crude Distillation capacities as reported by O&GJ



Product Movement Information

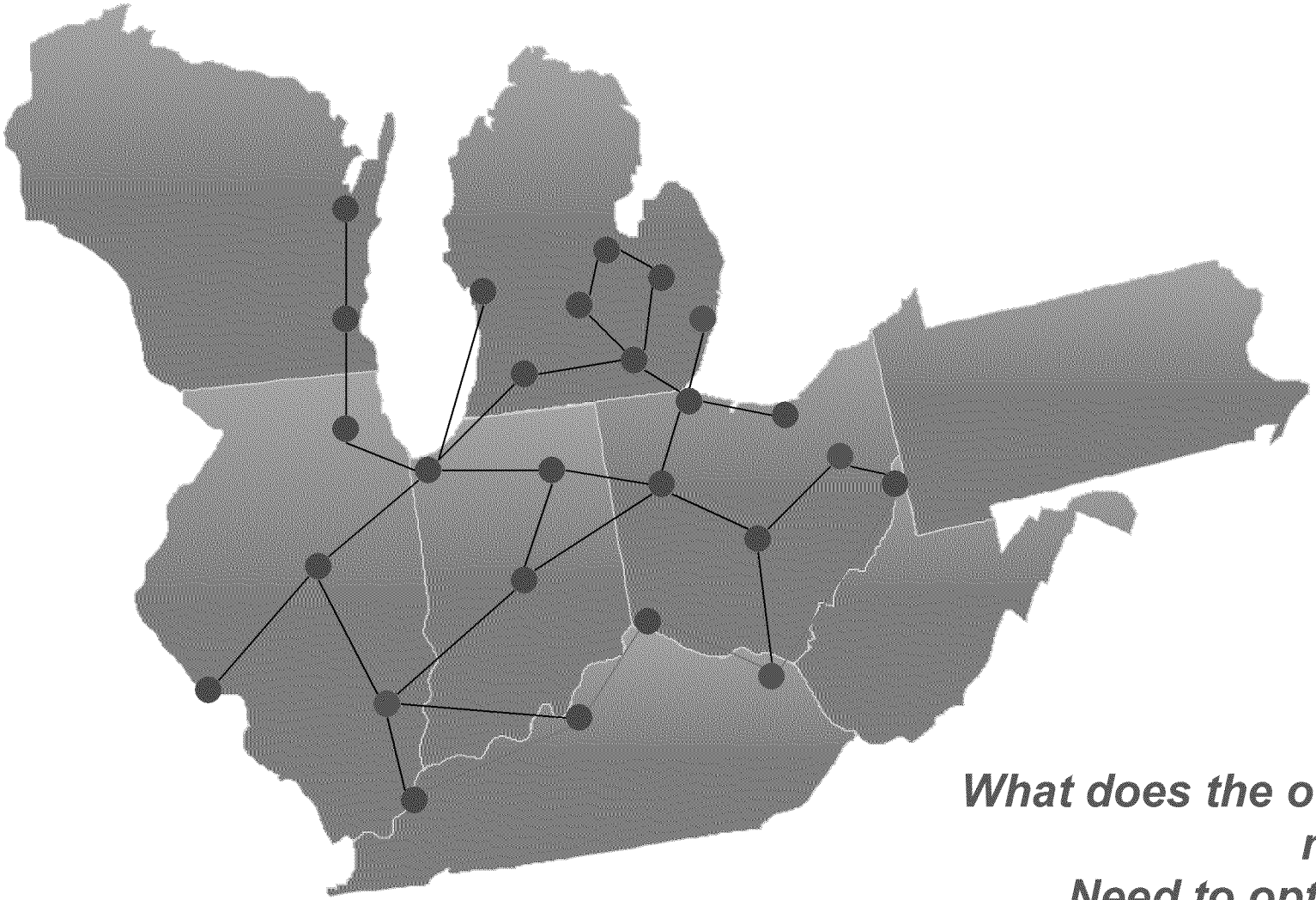
Mode of Transport	Est. Capacity MBPD	Cycle Time in Days	Transit Time in Days Minimum	Transit Time in Days Maximum
Buckeye Pipeline	100	7	8.5 (Linden, NJ to Neville Island PA)	Varies
Explorer Pipeline	640	10	9 (GC to Wood River) 4 (Wood River to Chicago)	25 (GC to Wood River) 24 (Wood River to Chicago)
Enterprise Pipeline	380	10	23 (GC to Indy) 24 (GC to Griffith) 25 (GC to Lebanon)	Varies
Barge	Varies	N/A	16 (GC to Louisville)	18

17cv01906 Sierra Club v. EPA

ED_001523_00005597-00014

Major Midwest Pipelines and Supply Sources

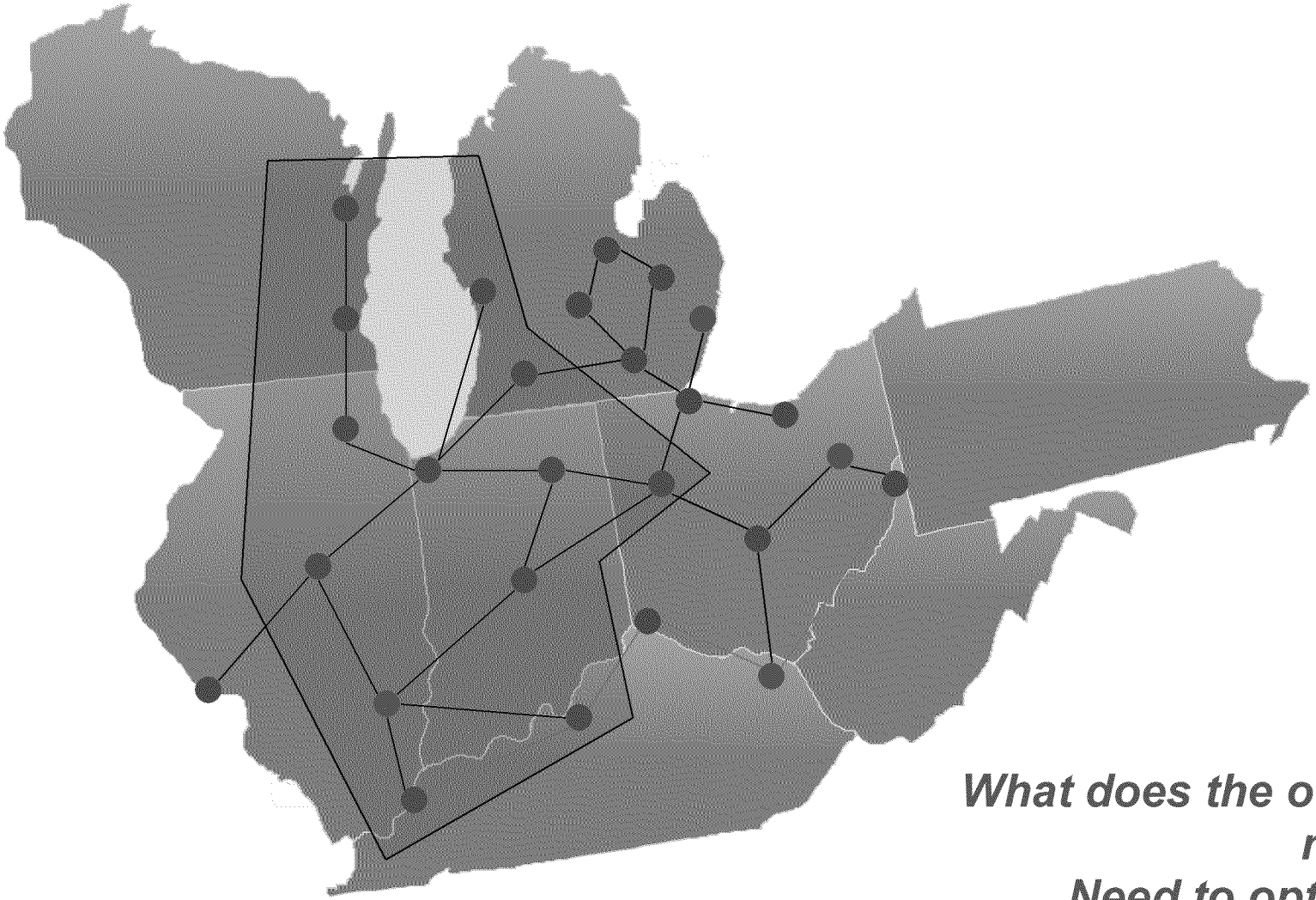
Is there any overlap?



What does the overlap mean?
Need to optimize!

Major Midwest Pipelines and Supply Sources

Is there any overlap?



What does the overlap mean?
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Major Midwest Pipelines and Supply Sources

Is there any overlap?



What does the overlap mean?
Need to optimize!

Major Midwest Pipelines and Supply Sources

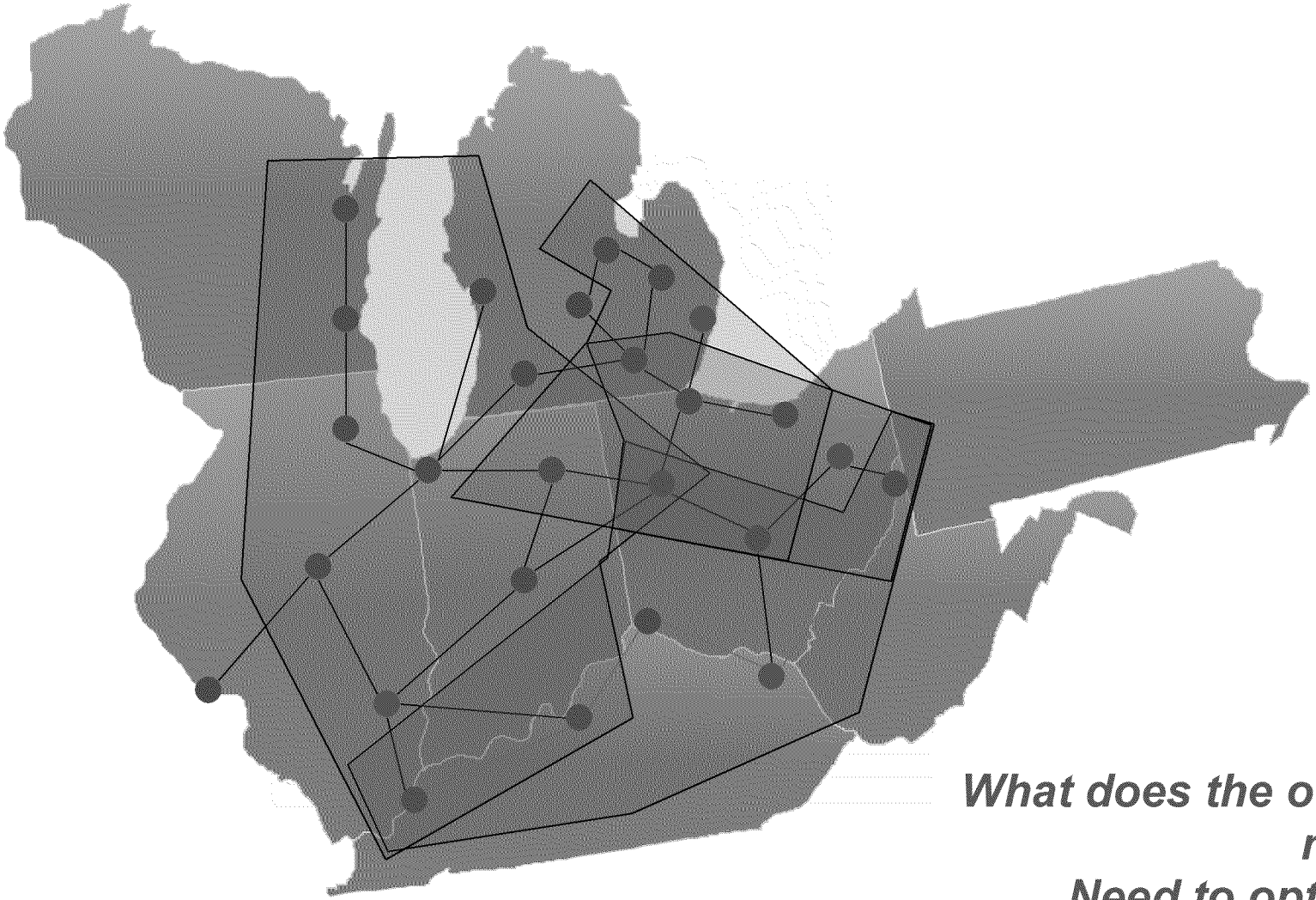
Is there any overlap?



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Major Midwest Pipelines and Supply Sources

Is there any overlap?



What does the overlap mean?
Need to optimize!

Major Midwest Pipelines and Supply Sources

Is there any overlap?



What does the overlap mean?
Need to optimize!

Overview of the Balance

Material Balance: Supply = Demand

Supply	Demand
Refinery Production	Sales
Purchases	Inventory Builds
Inventory Draws	Shipments to Gulf Coast
Shipments from Gulf Coast	

Major Midwest Pipelines and Supply Sources

Is there any overlap?



What does the overlap mean?
Need to optimize!

17cv01906 Sierra Club v. EPA

ED_001523_00005597-00022

From: Delahoyde, Magdelana A. EOP/WHO
Location: SoW, EEOB 230A (WAVES link in Calendar Notes)
Importance: Normal
Subject: Meeting to discuss CAFE-GHG standards
Start Date/Time: Mon 11/27/2017 9:00:00 PM
End Date/Time: Mon 11/27/2017 10:00:00 PM

Meeting will be with Auto Alliance and Global Automakers.

WAVES link: https://events.whitehouse.gov/?rid=YKPHQ233K7

From: Inge, Carolyn
Location: HQ-Room-WJCN-2530-50pp
Importance: Normal
Subject: Regulatory Reform Meeting with API
Start Date/Time: Tue 5/16/2017 3:00:00 PM
End Date/Time: Tue 5/16/2017 3:30:00 PM

From: Kime, Robin
Location: 3513A
Importance: Normal
Subject: Meeting with Christopher Chapel
Start Date/Time: Tue 1/16/2018 7:00:00 PM
End Date/Time: Tue 1/16/2018 7:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact: christopher.chapel@nee.com

From: Inge, Carolyn
Location: 3513A
Importance: Normal
Subject: Meeting with Will Lovell
Start Date/Time: Thur 5/4/2017 1:30:00 PM
End Date/Time: Thur 5/4/2017 2:00:00 PM

Hi

Would you add this meeting from Samantha's calendar please? Thank you.

Topic: Meeting with Will Lovell

Date: 5/4

Time: 9:30 – 10:00 a.m.

Location: 3513A

Required: wdslovell@gmail.com; Bolen, Brittany bolen.brittany@epa.gov

From: Delahoyde, Magdelana A. EOP/WHO
Location: Dial-In: (202) 395-6392; Leader Code: 295 3131; Participant Code: 201 3669
Importance: Normal
Subject: CAFE-GHG Update Call
Start Date/Time: Mon 11/20/2017 10:00:00 PM
End Date/Time: Mon 11/20/2017 11:00:00 PM

From: Delahoyde, Magdelana A. EOP/WHO
Location: Dial-In: (202) 395-6392; Leader Code: 661 0597; Participant Code: 345 2313
Importance: Normal
Subject: Call: Prep for California Meeting
Start Date/Time: Mon 11/13/2017 8:30:00 PM
End Date/Time: Mon 11/13/2017 9:30:00 PM

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with NAHB re: Renovation, Repair and Painting Program and Stormwater Issues
Start Date/Time: Wed 5/10/2017 7:30:00 PM
End Date/Time: Wed 5/10/2017 8:00:00 PM
Stormwater Issues - NAHB Briefing 5.10.17.pdf

Hi,

Would you set this up from Samantha's calendar Please? Thank you.

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

4 Attendees: Tamra Spielvogel, Amy Chai, Eva Birk and Tom Ward

Request: A follow-up conversation to discuss the RRP program. I'm emailing in follow-up to your conversation with Michael Mittelholzer at the NAHB meeting with Administrator Pruitt last week. I know several issues were discussed for additional follow-up during the meeting with the Administrator including the Renovation, Repair and Painting (RRP) Program and stormwater issues which my colleague Eva will be following up with you on in a subsequent message.

Attached is the material you and Michael discussed to provide additional detail regarding NAHB's concerns regarding implementation and evaluation of the RRP program. Specifically I have provided copies of NAHB's comments related to the Section 610 review as well as those NAHB submitted during both public comment periods EPA opened during the review of issues related to the lack of an approved lead test kit. Also, for your information I am including copies of two petitions NAHB has filed with EPA on the RRP program. The most recent was in regards to the changes made to the refresher training course requirements which was denied by the agency in December 2016. The EPA response is also enclosed. I have enclosed the 2010 petition

because while the other documents discuss the issues we have with the economic analysis of the rule, it was most comprehensively addressed in this petition on the test kit.

Finally, I was also told you are interested in the report where EPA's cost benefit estimates were called into question. The report was issued by the EPA Office of the Inspector General. The following link will take you to the OIG page for the report where you can access their findings, the report, as well as the responses exchanged between OIG and EPA on the report.

- https://www.epa.gov/office-inspector-general/report-review-hotline-complaint-concerning-cost-and-benefit-estimates-epas

I would note that one of the commitments made by the EPA to the OIG was to collect better data but they made the commitment to do so in the context of a separate rulemaking (the development of an RRP rule for Public & Commercial Buildings) and that survey is currently underway. NAHB individually and as part of an industry coalition has called into question the efficacy of this effort. While the data may be useful to the residential program collecting it in the context of the Public & Commercial Buildings rule has never seemed appropriate or truly illustrative given a range of other differences between the two rules. Furthermore, the data is being collected prior to establishing a hazard for Public & Commercial Buildings.

Contact:
TAMRA SPIELVOGEL Program Manager, Environmental Policy
National Association of Home Builders
1201 15th Street, NW | Washington, DC 20005
d: 202.266.8327 e: tspielvogel@nahb.org w: nahb.org

Stormwater Issues
National Association of Home Builders
Briefing for Office of Policy – U.S. EPA
May 10th, 2017

Background:

Because the nature of construction involves earth-moving activities, NAHB members must comply with federal, state and local stormwater regulations (see chart below). During **active construction**, operators must seek coverage for any disturbance over one acre, or under one acre within a larger common plan of development. Builders and developers are also indirectly regulated under the Clean Water Act in regards to permanent, or **post-construction** stormwater requirements. The National Pollution Discharge Elimination System (NPDES) program requires either states or EPA regional offices where EPA is the permitting authority to issue permits to the owners/operators of small Municipal Separate Storm Sewer Systems (MS4s). MS4s are viewed as point sources under the Clean Water Act (CWA) since they discharge polluted stormwater via sewer outfalls directly into rivers and streams.

Issues:

1. **Streamlined Small Lot Permit for Residential Sites**

   - NAHB would like to continue to work with the Agency to develop a streamlined "small lot" active construction stormwater permit**.** We are concerned that these efforts may be stalled.

   - NAHB worked with Office of Wastewater Management (OWM) staff over the past three years to develop a streamlined voluntary compliance plan template for residential sites. However, we do not yet have a green light on developing an EPA permit based on this model.

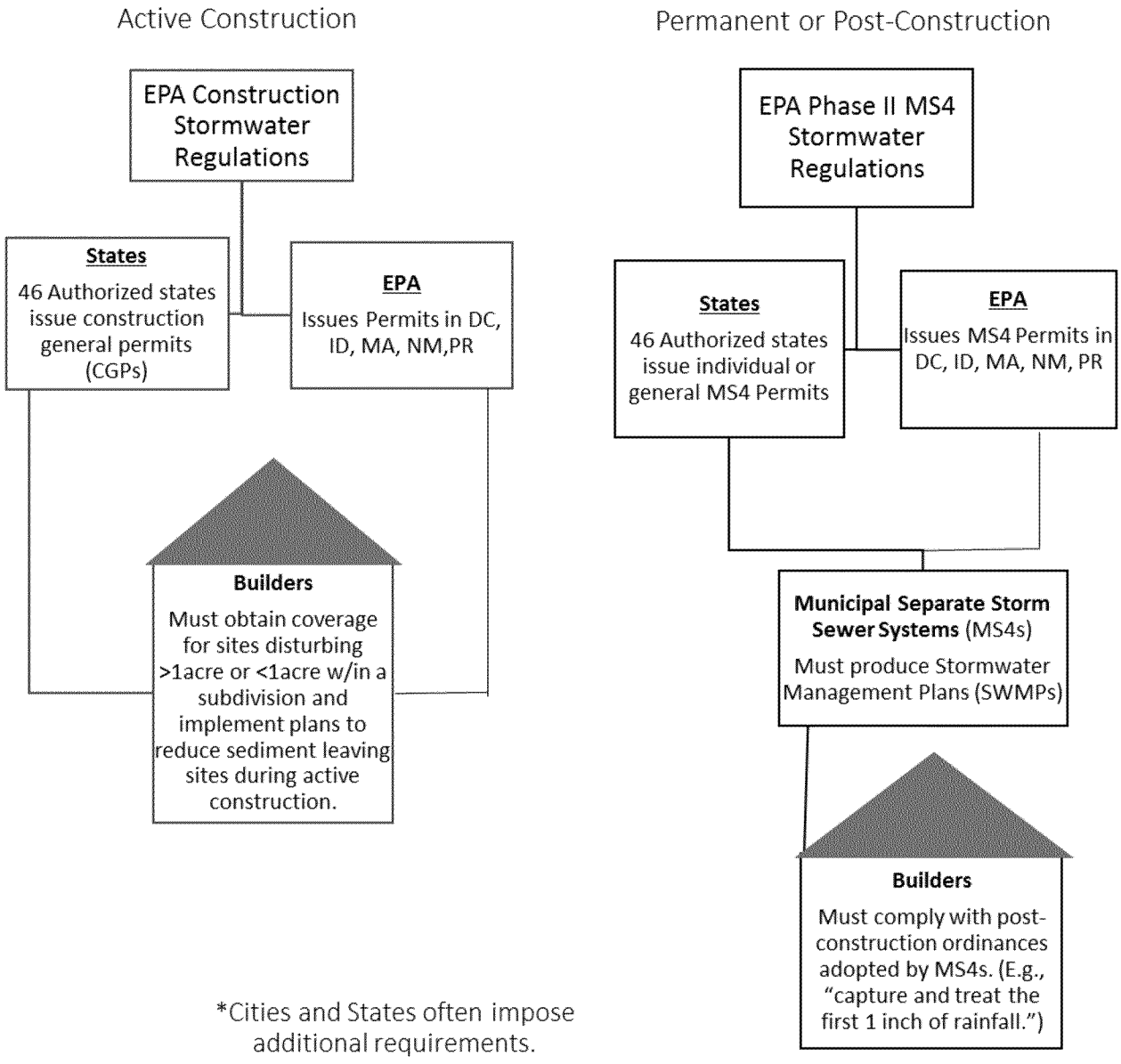
   - NAHB believes the cost savings to small businesses from shrinking the current ~300 page permit down to 20 pages would be enormous.

   - Work needs to start soon to allow time for NAHB and other stakeholders to provide feedback, develop compliance assistance tools, and organize outreach to our membership.

2. **Federal Overreach in the NPDES Stormwater Program**

   - In the four states where EPA is in charge of stormwater permitting, we've seen actions that far outreach the scope of the Clean Water Act.
   - Most recently, Region 3 included a provision in D.C.'s draft Phase I MS4 permit which mandates that the city spend $12.75 million local dollars to establish a Stormwater Retention Credit (SRC) purchase agreement program.
   - We are gravely concerned with this type of federal meddling in municipal affairs and the precedent this permit will set.

How Section 402 Stormwater Rules affect Builders



*Cities and States often impose additional requirements.

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Regulatory Reform Meeting with the National Association of Clean Water Agencies
Start Date/Time: Mon 11/20/2017 4:00:00 PM
End Date/Time: Mon 11/20/2017 4:30:00 PM

Request: A meeting on behalf of the National Association of Clean Water Agencies (NACWA), to discuss regulatory reform.

In attendance will be Adam Krantz, Nathan Gardner, Chris Hornback and Brent Fewell. Note: Nathan, Adam and Chris have previously met with Lee and Sarah although not on these issues.

Contact:

Brent Fewell, Esq. | **Earth & Water Law Group**
1455 Pennsylvania Ave., NW, Suite 400, Washington, DC 20004

(202) 280-6362 (o) | (202) 664-9297 (c) | www.earthandwatergroup.com

From: Gunasekara, Mandy
Location: 3415 WJC North
Importance: Normal
Subject: RF w/Michael
Start Date/Time: Thur 4/27/2017 1:30:00 PM
End Date/Time: Thur 4/27/2017 2:30:00 PM

POC: Valerie Washington 202.564.1016

From: Kime, Robin
Location: 3513A and Call: 1 (855) 564-1700; Ext: 1104438; Participant: 234567
Importance: Normal
Subject: Call with David Rachelson to Prepare for a Follow-up Meeting with the Administrator and Rubicon Global
Start Date/Time: Wed 11/15/2017 7:00:00 PM
End Date/Time: Wed 11/15/2017 7:30:00 PM

Leader pin: 592233

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with California Resources Corporation
Start Date/Time: Wed 5/10/2017 3:00:00 PM
End Date/Time: Wed 5/10/2017 3:30:00 PM

From: Bolen, Brittany
Location: 3500 WJCN
Importance: Normal
Subject: VNG.co - Natural Gas Vehicles
Start Date/Time: Mon 10/23/2017 3:00:00 PM
End Date/Time: Mon 10/23/2017 3:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Purpose: Meeting to discuss Natural Gas Vehicles

Contact: "Tucker, Jamie" <jtucker@AKINGUMP.COM>

Attendees:

Robert Friedman, VNG

Bon Atkinson, VNG

Larry Highbloom, VNG

Brad Couch, Ariel Corp

Jamie Tucker, Akin Gump.

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Kohler on EPA's Clay MACT Rule
Start Date/Time: Tue 5/16/2017 6:30:00 PM
End Date/Time: Tue 5/16/2017 7:00:00 PM
Comment.pdf

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

James (Buddy) Robinson – Senior Vice President, General Counsel & Corporate Secretary, Kohler Co.

Natalie Maciolek – Lead Attorney, Kohler Co.

Kristine Heine – Executive Vice President, Global Communicators

We will bring a copy of the comment we will submit to the docket on Monday, and leave you with a couple short documents that we will discuss with you during our meeting

Contact:

Natalie Maciolek

Lead Attorney

KOHLER.

Office: (920) 459-1685

Mobile: (920) 917-8948

Email: Natalie.Maciolek@kohler.com

444 Highland Drive | Kohler | WI | 53044

KOHLER.

Submitted electronically through http://www.regulations.gov

May 15, 2017

U.S. Environmental Protection Agency
Docket Number: EPA-HQ-OA-2017-0190
1200 Pennsylvania Avenue NW
Washington, D.C. 20460

Re: *Evaluation of Existing Regulations*, Docket No. EPA-HQ-OA-2017-0190, FRL–9961–60–OP, 82 Fed. Reg. 17793 (April 13, 2017)

To Whom It May Concern:

Kohler Co. (Kohler) appreciates this opportunity to identify regulations that may be appropriate for repeal, replacement, or modification pursuant to the referenced docket. Kohler understands that the Environmental Protection Agency (EPA) has formed a Regulatory Reform Task Force pursuant to Executive Order 13777 (82 FR 12285 - March 1, 2017) that has been charged with, among other things, identifying regulations that:

- Eliminate jobs, or inhibit job creation;
- Are outdated, unnecessary, or ineffective;
- Impose costs that exceed benefits; or
- Create a serious inconsistency or otherwise interfere with regulatory reform initiatives and policies.

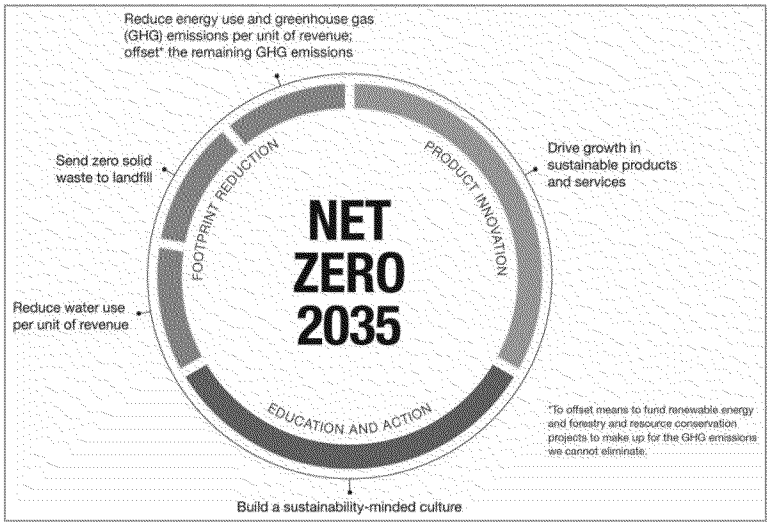
On March 24, 2017, EPA Administrator Pruitt issued an agency-wide memorandum on implementation of Executive Order 13777, which directed program offices to seek public input on existing regulations that might meet these criteria. As explained below, Kohler believes that EPA's Clay Ceramics National Emission Standards for Hazardous Air Pollutants rule, 40 CFR 60, Subpart KKKKK (Clay MACT Rule), and the regulation of emissions testing of non-road engines and generator sets as stationary sources, each meets one or more of these criteria. As such, both rules warrant consideration by EPA for repeal, replacement or modification under this initiative. Aspects of each rule contain requirements that impose significant expense with no discernable benefit, threatening Kohler's competitiveness in the global economy.

Background

Kohler, founded in 1873, is one of America's oldest and best known manufacturers. The Company is a leading maker of kitchen and bath fixtures and also manufactures small engines used in off-road equipment, generators and water pumps, as well as generators powered by KOHLER engines and other

leading engine manufacturers. Kohler competes in the global marketplace and therefore always must be mindful of the increasing burden of United States government regulation on Kohler's international competitiveness. As such, Kohler supports the Administration's effort to reduce the regulatory burden on American manufacturing companies while not undermining environmental protection. The latter point is critical to Kohler, as we firmly believe that integrating business and environmental practices is undeniably better for everyone — our company, our associates, our customers, and the environment.

Indeed, Kohler believes that better business and a better environment go hand in hand. Kohler works hard to reduce the Company's environmental impact. We have committed to a goal of sending no solid waste to landfills, reducing or offsetting 100% of our greenhouse gas emissions and reducing our water usage through a program called "Net Zero 2035" (see graph). Kohler has been driving growth and innovation by developing products that have lower environmental impacts over their entire life cycle, and we are systematically incorporating sustainability into the product development process itself.



Clay NESHAP Rule Background

The 1990 Amendments to the Clean Air Act (CAA) establish a fairly complex program to regulate emissions of Hazardous Air Pollutants (HAPs) from specific industrial source categories. The program requires EPA to establish National Emission Standards for Hazardous Air Pollutants (NESHAPs) that regulate HAP emissions emitted by discreet industrial source categories throughout the country.

NESHAPs apply to major sources of HAP emissions and also can apply "as deemed appropriate by EPA" to minor sources. Major sources are defined as those that emit 10 tons per year of any single HAP, or 25 tons per year of all HAPs combined. Minor sources (a/k/a "area sources") have HAP emissions below these major source thresholds.

As a general matter, major source HAP emission limitations are more stringent. For a major source category, EPA will impose technology-based emission standards requiring the maximum degree of reduction in emissions that EPA deems achievable, often referred to as "maximum achievable control technology" or MACT standards. 42 U.S.C. Sec. 7412(d)(1)-(2). Achievability is determined based upon a review of the best performing similar sources in the category using clean processes, emission control devices, work practices, or other pollution reduction methods. *Id*. These best performing emissions levels set a baseline, or "MACT floor," for creating the MACT standard. The floor differs for existing and

new sources, with new sources having stricter emission limitations. The more stringent a MACT floor, the more stringent the associated MACT limitation.

For area source categories, EPA may choose to promulgate emission standards that reflect "generally available control technologies or management practices" as a HAP emission limitation. 42 U.S.C. § 7412(d)(5). These standards can be – and typically are – less rigorous than those required for major sources under 42 U.S.C. § 7412(d)(1).

Kohler Co.'s Concerns with EPA's Co-location Interpretation of the Clay MACT Rule

Kohler currently employs approximately 9,000 associates at its three locations where it has sanitaryware manufacturing facilities impacted by the Clay MACT Rule (1,700 of whom are dedicated to sanitaryware operations). These sanitaryware facilities are located in Wisconsin, South Carolina and Texas and manufacture toilets, sinks and other ceramic kitchen and bath fixtures.

Kohler Co. is the only sanitaryware company affected by the Clay MACT Rule, which makes it cost-prohibitive for Kohler to expand its existing sanitaryware facilities at these locations because they are regulated as "major sources" due to EPA's co-location interpretation of the CAA. Kohler's sanitaryware facilities themselves are minor (area) sources based on the low HAP emissions levels associated with the sanitaryware manufacturing processes. However, solely because Kohler's sanitaryware facilities are co-located with other Kohler manufacturing operations, the sanitaryware units are now regulated by EPA as "major" sources. In other words, EPA's policy is to aggregate HAP emissions from the sanitaryware area sources with all other HAP emissions from unrelated co-located processes. This policy results in Kohler's sanitaryware facilities being regulated as major sources, with the attendant more stringent pollution control requirements, even though the HAP emissions from the sanitaryware facilities are below major source thresholds. The EPA's policy makes little sense since the HAP emissions from Kohler's sanitaryware operations are not any higher simply because the facilities are located next to other manufacturing operations. EPA's interpretation of the CAA essentially penalizes Kohler for having built sanitaryware operations next to other operations long before the CAA was in existence.

The Clay MACT Rule puts Kohler's sanitaryware facilities at a significant competitive disadvantage vis-à-vis foreign-owned competitors, which do not have to comply with the Clay MACT Rule as they operate only sanitaryware facilities, which are area sources themselves, and are not co-located with any other major sources. Foreign-owned competitors are not subject to the same compliance costs, including additional testing, monitoring, record keeping and reporting obligations, when operating their existing facilities, or when considering where to build and expand. This gives them a competitive advantage.

While it may not have been the intent of EPA to single out Kohler, the Clay MACT Rule does just that, with no measurable benefit to the environment, as Kohler's sanitaryware facilities do not emit HAPs at major sources quantities. Moreover, Kohler is placed at a competitive disadvantage by being subjected to more stringent and costly regulatory requirements even though its HAP emissions may be similar to, or lower than, those of its foreign-owned competitors.

The EPA's co-location policy for determining "major source" status for the various source categories should be revised or eliminated. The CAA identifies specific industrial source categories for a reason, and "major source" determinations should be based solely on emissions output from each source category in operation at any facility site, and not by a company's siting decisions made decades before the CAA was even enacted. This change would ensure a level playing field for all businesses in a given category, and would not impose and force us to waste "major source" compliance resources on sources with HAP emissions at the levels of a minor (area) source.

Kohler Co.'s Concerns with the MACT Floor Used to Establish the Clay MACT Limitations

Kohler maintains that EPA violated the CAA by using emission data that was not representative of an existing sanitaryware kiln operating at the time of the Agency's rulemaking to set the MACT floor for the Clay MACT Rule. Rather than collect emissions data from an existing sanitaryware kiln, in 2010 EPA directed Kohler to change the operational configuration of a sanitaryware kiln by operating an emission scrubber while testing the HAP emissions from that kiln. At that time, there was no federal or state requirement to operate the kiln with a scrubber, nor did Kohler operate its kiln with a scrubber. The EPA mandated testing measured artificially low HAP emissions from the kiln that did not reflecting real world emissions rates. Nonetheless, EPA used this scrubber-related emissions data to establish the existing source emissions floors in the Clay MACT Rule. As a consequence, many of the HAP limitations in the Clay MACT Rule are predicated upon an emissions floor that assumes existing sanitaryware facilities in the United States operate with scrubber technology – a premise that is simply not true.

On December 23, 2015, Kohler filed a Petition for Administrative Reconsideration of the Clay MACT Rule that raised this issue. See Docket EPA-HQ-OAR-2013-0290. By letter dated May 12, 2016, EPA denied the Petition with respect to this issue. Kohler also filed a Petition for Judicial Review of the Clay MACT Rule with the United States Court of Appeals for the District of Columbia, which challenges the manner in which EPA established the MACT floor. See *Sierra Club, et al. v. US EPA, et al.*, Case No. 15-1487 (and consolidated cases)(D.C. Cir.). The appeal has been fully briefed, but oral argument has not yet been scheduled.

Notwithstanding these other administrative and judicial proceedings, EPA should, at a minimum, revise the existing source floor analysis in the Clay MACT Rule without the data points generated by this fabricated "existing" kiln utilizing a scrubber.

Emissions Testing of Non-road Engines and Generator Sets as Stationary Sources

Kohler Co. manufactures and tests non-road engines and generator sets. Kohler believes the testing of these engines and generators is exempt from stationary source rules; specifically, 42 U.S.C. §§ 7602(z), 7543, and 7550, and 40 CFR § 1068.30. EPA Region 7 issued a guidance letter dated November 10, 2016, to the Air Quality Bureau of the Iowa Department of Natural Resources, stating this type of testing is exempt from stationary source rules. See https://www.epa.gov/nsr/john-deere-dubuque-works-stationary-or-mobile-source-determination. **Kohler requests EPA further clarify this in their rules and among all EPA regions, so that these operations are treated equitably across the U.S.**

Conclusion

Kohler believes the aforementioned rules warrant consideration for repeal, replacement, or modification. EPA should promulgate rules and establish policies consistent with the requirements under the CAA without unfairly singling out and penalizing a U.S. company, which provides good manufacturing jobs for thousands of Americans and contributes to our national economic growth. We would welcome EPA directing a staff member to work with our environmental team to find a way to make these rules workable.

Respectfully,

Kohler Co.

From: Viator, Brad
Location: 1-800-882-3610 passcode 8438589
Importance: Normal
Subject: Call RE EEI External Affairs Meeting
Start Date/Time: Fri 10/20/2017 6:30:00 PM
End Date/Time: Fri 10/20/2017 7:00:00 PM

From: Kime, Robin
Location: 3513A
Importance: Normal
Subject: Meeting with Kristina Moore
Start Date/Time: Tue 11/21/2017 7:00:00 PM
End Date/Time: Tue 11/21/2017 7:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo ID to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact: Kristina.Moore@fticonsulting.com

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with the Mosaic Company re: Smart Sectors
Start Date/Time: Tue 10/24/2017 5:30:00 PM
End Date/Time: Tue 10/24/2017 6:00:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: I was able to join the Smart Sectors kick-off event yesterday. It really is exciting to see industry and government working together to find solutions to environmental issues. I am located here in DC for The Mosaic Company. We are a U.S. mining and manufacturing company (we mine phosphate and potash to make critical crop nutrients or fertilizer for farmers in the US and around the world) that touches a few sectors. We submitted comments to the EPA earlier this year on regulatory reform. I'd love to come by and give you more info on who we are and what we have been experiencing in the permitting area. If it works to also include the liaison for chemical manufacturing that would be great. My colleague Eileen Stuart will be joining me as well.

Contact: **Lorine D. Card |Federal Government Affairs**
The Mosaic Company | 300 M Street SE | Suite 402 | Washington, DC 20003
P: 202.420.9893 | M: 202.641.7755 | E: lorine.card@mosaicco.com | www.mosaicco.com

From: Inge, Carolyn
Location: 3513A
Importance: Normal
Subject: Call in Advance of the Administrator's 4/27 Meeting with Auto Alliance - Please call the EPA Polycom (202) 501-1854
Start Date/Time: Tue 4/25/2017 9:15:00 PM
End Date/Time: Tue 4/25/2017 9:35:00 PM

Hi

Will you add this for today please from Samantha's calendar? Thanks

Topic: Call in Advance of the Administrator's 4/27 Meeting with Auto Alliance - Please call the EPA Polycom (202) 501-1854

Date: Today

Required: Bolen, Brittany bolen.brittany@epa.gov; Schwab, Justin schwab.justin@epa.gov; jthomas@autoalliance.org

Cc: Kime, Robin <Kime.Robin@epa.gov>; Inge, Carolyn <Inge.Carolyn@epa.gov>; Irving, Verna <Irving.Verna@epa.gov>

Location: 3513A

Time: 5:15 p.m. to 5:35 p.m.

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: National Coalition for Advanced Transportation Discussion re: Mid-term Evaluation for LDV
Start Date/Time: Fri 11/3/2017 5:00:00 PM
End Date/Time: Fri 11/3/2017 5:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact:

Robert A. Wyman, Jr.

LATHAM & WATKINS LLP

Email: robert.wyman@lw.com<mailto:robert.wyman@lw.com>

355 South Grand Avenue

Los Angeles, CA 90071-1560

Direct: +1.213.891.8346

Attendees:

Bob Wyman (Latham)

Devin O'Connor (Latham)

Amy Pressler (Edison International)

Marc Lampkin (Brownstein Hyatt)

Joe Mendelson (Tesla)

Rohan Patel (Tesla)

Emily Duncan (Exelon)

Melissa Lavinson (PG&E)

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with We Are Golf (WAG)
Start Date/Time: Wed 4/26/2017 6:30:00 PM
End Date/Time: Wed 4/26/2017 7:00:00 PM

From: Kime, Robin
Sent: Monday, April 24, 2017 1:19 PM
To: Inge, Carolyn <Inge.Carolyn@epa.gov>
Subject: Meeting with We Are Golf (WAG)

Hi

Please add this from SD's calendar. Thanks

Hi- will you add this name to the invitation? Thanks

elannan@forbes-tate.com

Topic: Meeting with We Are Golf (WAG)

Date: 4/26

Time: 11:45 a.m. – 12:15 p.m.

Location: 3530 or one of the rooms above it please

Required: jsadosky@forbes-tate.com; Bolen, Brittany bolen.brittany@epa.gov

Cc: Kime, Robin <Kime.Robin@epa.gov>; Inge, Carolyn <Inge.Carolyn@epa.gov>; Irving, Verna <Irving.Verna@epa.gov>; Germann, Sandy <Germann.Sandy@epa.gov>

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.** Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: We represent a golf coalition you may be familiar with called We Are Golf (WAG). The coalition was formed in 2008 with the express purpose of giving decision-makers in Washington a more accurate picture of the golf industry and the game of golf in general. Negative assumptions about who plays, where they play etc. and a lack of recognition about how many jobs golf provides and the nature of those jobs had lead to punitive singling out of golf in policymaking and legislation. Apart from clearing the air on those fronts, WAG has also invested a lot of the coalition's efforts in advocating around environmental issues. It's that set of issues we of course would love to talk about with Administrator Pruitt and your appropriate EPA colleagues.

The golf industry has made huge strides in recent years when it comes to sustainable management of the two million acres of open space golf course land and water we have in this country. We have a great story to tell about huge steps we have taken forward to improve water quality and use, energy savings, pollution reduction and creation and protection of high quality fish and wildlife habitat. We want to stay on this trajectory and firmly believe we can continue to improve golf property stewardship to provide broad public benefits. In recent years, federal policies have unfortunately represented drags on our ability to do this. The golf industry is very excited about starting some fresh conversations with this administration and we'd like to start at EPA with your boss. WAG is eager to work with an administration that will have an interest in pausing to think through how any new policies or enforcement of existing policies will impact the golf industry's ability to increase the environmental value of golf.

Attendees:

- Steve Mona, Chief Executive Officer, World Golf Foundation

· Darell Crall, Chief Operating Officer, PGA of America

· Ty Votaw, Chief Marketing Office, PGA Tour

· Kathryn Carson, Chief Legal Officer, United States Golf Association

· Rhett Evans, Chief Executive Officer, Golf Course Superintendents Association of America

· Jay Karen, Chief Executive Officer, National Golf Course Owners Association

· Jeff Morgan, Chief Executive Officer, Club Managers Association of America

· Michael Kline, Director of Intellectual Property and Corporate Secretary, Srixon/Cleveland Golf US Golf Manufacturers Council

More on We Are Golf and National Golf Day can be found here:

http://wearegolf.org

Contact:

Jeffrey C. Sadosky

jsadosky@forbes-tate.com

Forbes-Tate Partners

From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: Meeting with Samsung: TV Energy Star Standards
Start Date/Time: Wed 10/25/2017 5:30:00 PM
End Date/Time: Wed 10/25/2017 6:00:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: Samsung would appreciate the opportunity to meet Samantha to discuss TV energy star standards.

Contact: Demi A. Yeager
Executive Assistant
BGR Government Affairs, LLC
BGR | GROUP
The Homer Building
Eleventh Floor South
601 Thirteenth Street, NW
Washington, DC 20005
Direct: (202) 661.6355
Fax: (202) 833-9392
dyeager@bgrdc.com

Attendees:

Prerna Tomar – Samsung

John Godfrey – Samsung

Kristin Strobel – BGR Group

From: Inge, Carolyn
Location: 3513E
Importance: Normal
Subject: Call to Discuss the Four Corners Power Plant – Please call the EPA Polycom (202) 501-1854
Start Date/Time: Mon 4/24/2017 8:15:00 PM
End Date/Time: Mon 4/24/2017 8:45:00 PM

Hi

Will you add this from SD's calendar today please – thank you.

Topic: Call to Discuss the Four Corners Power Plant – Please call the EPA Polycom (202) 501-1854

Date: Today

Time: 4:15 – 4:30 p.m.

Location: 3513E

Required: Bolen, Brittany <bolen.brittany@epa.gov>; Gunasekara, Mandy Gunasekara.Mandy@epa.gov; megan.berge@bakerbotts.com

Cc: Kime, Robin <Kime.Robin@epa.gov>; Inge, Carolyn <Inge.Carolyn@epa.gov>; Irving, Verna <Irving.Verna@epa.gov>

Request:

I represent APS, the operator of the Four Corners Power Plan located on the Navajo Nation. We would like to discuss with you a federal implementation plan finalized in early January that affects the plant. We are preparing materials on the FIP; in short, APS is concerned with certain monitoring requirements that restrict plant operations without providing environmental benefits. APS believes there are more effective and less burdensome monitoring options available. I would appreciate the chance to speak with you about the FIP, which has not yet been published in the *federal register*.

Contact:

Megan Heuberger Berge

Partner
BAKER BOTTS L.L.P.
The Warner | 1299 Pennsylvania Ave., NW | Washington, DC 20004
1.202.639.1308 (direct) | 1.202.256.0827 (cell)

From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: Meeting with National Marine Manufacturers to Discuss HFC 134a
Start Date/Time: Mon 10/16/2017 6:00:00 PM
End Date/Time: Mon 10/16/2017 6:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Scott Lewit, Structural Composites, Inc and Compsys, Inc

Mark Ehrlich, Wabash National

John McKnight, NMMA

Andrea Campbell, VanNess Feldman

George Cooper, Forbes Tate Partners

Jeff Sadosky, Forbes Tate Partners

Request: Earlier this year, our client the National Marine Manufacturers had a very productive meeting with your team at the EPA focused on E15 issues. At that meeting, we also raised an issue regarding something called HFC 134a. NMMA member company Structural Composites is using HFC 134a to produce some extraordinary new products – ultra-light weight composite material being used to make boats and truck trailers primarily, but they are hindered by EPA regulatory issues.

Contact:

Jeffrey C. Sadosky

Forbes Tate Partners

777 6th Street NW

8th Floor

Washington, DC 20001

(202) 340-8586 cell

jsadosky@forbes-tate.com

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Noble Energy
Start Date/Time: Fri 5/5/2017 3:00:00 PM
End Date/Time: Fri 5/5/2017 3:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: I would like very much to meet with you soon regarding a few ideas we have regarding air quality reform. I have a long (I am old) history on these issues from an oil and gas industry perspective, as well as State (CO) and Federal (EPA Hdqtrs and Region 8) roles. Noble is solution-oriented and would like to bring a few ideas to your attention. Any chance of meeting next Thursday or the following week? Depending on scheduling, I may bring our EVP of Environmental to the meeting.

Contact:

Kate Fay

Director, Environmental and Regulatory Policy

Noble Energy, Inc.

1625 Broadway, Suite 2200

Denver, Colorado 80202

1001 Noble Energy, Way

Houston, TX 77070

303.910.2830 (cell)

720.587.2397 (office)

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Portland Cement
Start Date/Time: Mon 5/1/2017 2:30:00 PM
End Date/Time: Mon 5/1/2017 3:00:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: Call with Todd and his environment and regulatory affairs lead, Mike Schon, to discuss pending issues before EPA and some of key ideas for improving and streamlining permitting and regulations that affect the cement industry.

Contact:

A. Todd Johnston

Executive Vice President

Portland Cement Association

202-719-1974 (o)

202-253-4464 (c)

From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: Meeting with the Petroleum Marketers Association of America (PMAA)
Start Date/Time: Tue 11/7/2017 6:00:00 PM
End Date/Time: Tue 11/7/2017 6:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Participants:

Rob Underwood

PMAA Regulatory Counsel, Mark Morgan

Petroleum Marketers and Convenience Stores of Iowa's regulatory counsel, John Maynes

Contact:

Rob Underwood

President

Petroleum Marketers Association of America (PMAA)

1901 North Fort Myer Drive, Suite 500

Arlington, VA 22209

Email: runderwood@pmaa.org

Work: 703.351.8000

Cell: 703.470.4566

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with AXPC to Discuss Air Issues
Start Date/Time: Wed 4/26/2017 8:00:00 PM
End Date/Time: Wed 4/26/2017 8:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: A meeting to discuss air issues with the some of the member companies of the American Exploration & Production Council (www.axpc.com)www.axpc.com on Wednesday, April 26th. As you may know, AXPC is comprised of the 33 largest independent E&Ps (list below) and we are hosting a fly-in of the member companies' Environment Health and Safety (EHS) subject matter experts to discuss air issues impacting the industry. We will have 6 or 8 folks from our side.

Attendees:

Bruce Thompson, President of AXPC

Jagadeesan Sethuraman	Whiting Petroleum
Adell Heneghan	PDC Energy
Teresa Hull	SM Energy
Megan Garvey	QEP Resources

Contact:

Ryan Day Thompson | Senior Policy Advisor

AKIN GUMP STRAUSS HAUER & FELD LLP

Mobile: +1 202.236.7885 | thompsonr@akingump.com | akingump.com | Bio

AXPC Member Companies

Anadarko Petroleum Corporation

Apache Corporation

Cabot Oil & Gas Corporation

Chesapeake Energy Corporation

Cimarex Energy Co.

Concho Resources, Inc.

Devon Energy Corporation

Diamondback Energy, Inc.

EnCana Corporation

Energen Resources Corporation

EnerVest, Ltd.

EOG Resources, Inc.

EP Energy, Corp.

Jonah Energy LLC

Linn Energy LLC

Marathon Oil Corporation

Newfield Exploration Company

Noble Energy, Inc.

Oasis Petroleum Inc.

Occidental Oil & Gas Corporation

PDC Energy, Inc.

Pioneer Natural Resources Company

QEP Resources, Inc.

Range Resources Corporation

Rice Energy Inc.

Seneca Resources Corporation

SM Energy Company

Southwestern Energy Company

Synergy Resources Corporation

Ultra Petroleum Corp.

Whiting Petroleum Corporation

WPX Energy, Inc.

XTO Energy, Inc.

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with the Northwest Public Power Association
Start Date/Time: Tue 4/25/2017 3:30:00 PM
End Date/Time: Tue 4/25/2017 4:00:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Anita Decker, Executive Director NWPPA

Doug Hardy, Central Montana Electric Power Cooperative, MT

Dave Kelsey, Yellowstone Valley Electric Cooperative, MT

Norman Tebay, Vigilante Electric Cooperative, MT

Clay Koplin, Mayor of Cordova, AK

Brad Janorschke, Homer Electric Association, AK

Molly Simpson, Douglas County Public Utility District, WA

Steve Taylor, Mason County Public Utility District #1, WA

Contact:

Theresa Pugh Consulting, LLC

-a woman-owned small business

703-507-6843 Office

2313 North Tracy Street

Alexandria, Virginia 22311

www.theresapughconsulting.com

Request: I am writing today on behalf of Northwest Public Power Association (NWPPA)'s Executive Director Anita Decker. Anita will be in Washington D, C. from Washington state on April 25-26, 2017. She would like to meet with Administrator Pruitt, you or other political appointees who are assigned to work on electric utility issues of interest to NWPPA.

NWPPA is an electric utility association in the Pacific Northwest representing 151 hydroelectric, nuclear power and natural gas electric utilities (municipal and electric coops) affected by EPA regulations including some that are going to be revisited under recent Executive Orders. Their membership involves many electric utilities (municipal and coop) that would be affected by EPA regulations across several states in the Northwest—not just those in Washington state. NWPPA's member utilities serve 20 million customers making it one of the largest electric utility organizations in the western part of the United States.

They are interested in the following:

- Waters of the US – next steps (realizing it has been addressed in the Executive Order)
- Clean Power Plan review and replacement (they are aware of the Executive Order action last week)
- General EPA priorities related to the electric power sector

A link to the NWPPA organization is https://www.nwppa.org/about-nwppa/ and board information at https://www.nwppa.org/about-nwppa/nwppa-board-of-trustees/

From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: Meeting with Boeing and GE
Start Date/Time: Thur 10/5/2017 2:30:00 PM
End Date/Time: Thur 10/5/2017 3:00:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

Topic: ICAO fuel efficiency standards

Attendees:

Boeing:

1. Pete Pagano
2. Ted Austell
3. Jenny McIntyre

GE:

1. Roger Martella
2. Michael Fitzpatrick
3. Neal Kemkar
4. Darby Becker

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact: Roger.Martella@ge.com

From: Kime, Robin
Location: 3513A
Importance: Normal
Subject: Call with the Independent Petroleum Association of America: Prep for the Administrator's 5/1 Meeting: Please call the EPA Polycom (202) 501-1854
Start Date/Time: Wed 4/26/2017 7:00:00 PM
End Date/Time: Wed 4/26/2017 7:30:00 PM

Attendees:

Lee Fuller, Samantha McDonald, Susan Ginsberg of IPAA

Contact: Lee Fuller, lfuller@ipaa.org

From: Lee Fuller [mailto:lfuller@ipaa.org]
Sent: Friday, April 7, 2017 4:30 PM
To: Bolen, Brittany <bolen.brittany@epa.gov>
Subject: Regulatory Reform and Other Items

Brittany,

I read that one of your assignments is the regulatory reform task force. Consequently, I wanted to reach out on some issues of concern. I've attached an email that I sent to Ryan Jackson that raises several issues that we would like to discuss. (Separately, we are trying to arrange a meeting for Barry Russell, IPAA's President and CEO with Administrator Pruitt through Sydney Hupp.)

Obviously, events are moving quickly. I know that the Administration filed an abeyance petition on the Subpart OOOOa litigation today. There is an issue there that is related that I'd like to call to your attention. The Subpart OOOOa fugitive emissions program – with its costly Leak Detection and Repair (LDAR) requirements – is scheduled to take effect on June 3. It would be helpful if this requirement, at least, could be stayed while the Subpart OOOO and OOOOa requirements are being reconsidered since a different approach might be developed. I know there are other provisions that are already in effect that raise similar issues.

I also spoke with Dave Rostker from the SBA Advocacy office regarding LDAR in a small business context where the issues arises in both the Subpart OOOOa and VOC Control Techniques Guidelines context. He suggested reaching out to EPA as well.

Hopefully, we can discuss these issues soon given your schedule.

Thanks for your consideration,

Lee Fuller

From: Lee Fuller
Sent: Thursday, April 6, 2017 2:40 PM
To: Ryan Jackson (Jackson.Ryan@epa.gov) <Jackson.Ryan@epa.gov>
Subject: IPAA Issues at EPA; Possible Meeting

Ryan,

I'm reaching out to you but would be happy if you point me to a preferred contact person.

After the recent Energy Executive Order, IPAA would like to discuss a number of pending issues with EPA.

Barry Russell, IPAA's President and CEO, would like to meet with Administrator Pruitt to introduce himself and IPAA. Barry worked for EPA in the 1970s before coming to IPAA.

The issues that we'd like to discuss relate to several matters.

First, EPA's actions in response to the Energy EO with regard to the methane NSPS (Subparts OOOO and OOOOa) are most important to IPAA. While currently engaged in the litigation opposing the regulations, the pathway to reconsideration and possible revision is critical. IPAA wants to be involved as soon as possible and wants to offer its cooperation.

Second, IPAA strongly supports efforts to expand and enhance delegation of regulatory authority to states. We are looking for options to be helpful in identifying pathways, working with our state cooperating associations to encourage state actions and working with Congress if there are barriers that need to be addressed.

Additionally, following are several other items – mostly directly affecting independent oil and natural gas producers – that we would like to identify as issues that we would hope EPA could address:

1. Control Techniques Guidelines (CTG) – As a part of the Energy Executive Order, EPA is directed to reconsider the oil and natural gas methane New Source Performance Standard (NSPS) – Subparts OOOO and OOOOa. When the Obama Administration proposed the NSPS, it also proposed a CTG for existing sources of Volatile Organic Compounds (VOC) in Ozone nonattainment areas. The CTG was finalized in October 2016. It should be suspended or withdrawn until the NSPS issues are resolved and determinations can be made on the appropriateness of the technology being applied to existing sources. Otherwise, the CTG will be applicable in future State Implementation Plans (SIP).

2. RCRA Subtitle D Consent Decree – EPA agreed to a Consent Decree to settle litigation regarding mandatory duties under RCRA Subtitle D related to making determinations regarding the appropriateness of state oil and natural gas production wastes regulations. EPA has until March 2019 to respond but it should act quickly for two reasons. First, EPA's mandate to act does not require an extensive burden and the longer it takes to act, the more state programs appear to be viewed as inadequate. Second, the mandatory duties require action every three years. Action in 2017 would allow EPA to reconfirm its position in 2020 and establish a clear practice for the future.

3. Unconventional Oil and Gas (UOG) Extraction Effluent Limitations Guidelines (ELG) – EPA finalized UOG Extraction ELG for discharges to Publicly Owned Treatment Works (POTW) in June 2016. These ELG should be based on a technology standard – Best Available Technology Economically Achievable (BATEA). EPA concluded that all discharges to POTW should be prohibited based on the availability of underground injection wells and of recycling options. Neither of these are BATEA. EPA should not be making zero discharge determinations based on its perception of other options. It should determine BATEA requirements. If the BATEA requirements are too expensive, it should be the dischargers' choice to use alternative approaches.

4. Clean Air Act Enforcement Tactics – Over the past several years, EPA's Enforcement tactics have been excessively aggressive. For example, in North Dakota where the state did not have delegation of the NSPS program for oil and natural gas production, EPA Enforcement initiated direct actions against producers with regard to its interpretation of Subpart OOOO requirements for storage vessels. This interpretation differed from those EPA technical staff had initially indicated. Using its enforcement power, EPA filed proposed penalties against a privately held producer that exceeded the value of its assets. The purpose was clear and predictable. EPA wanted to use its enforcement power to compel a limited asset company to enter into a consent agreement that would require actions that met Enforcement's interpretation of the regulation and to commit to additional actions that were beyond EPA Clean Air Act authority to require. Not only did EPA use a gap in state delegation to step over North Dakota in its zeal, but these types of enforcement tactics reflect poorly on EPA and the federal government and should be ended.

5. Ozone National Ambient Air Quality Standards (NAAQS) Revisions – The 2014 revision to the Ozone NAAQS should be reconsidered. Implementation of the 2008 revision to the Ozone NAAQS had yet to be implemented and evaluated when the 2014 revision was finalized. NAAQS attainment should be the target, not promulgating new, unachievable revisions. EPA's own data showed that the same areas it projected to fail to attain the 2008 NAAQS would fail to meet the 2014 revision. In those areas, the regulatory requirements would not change but the 2014 revision would bring new areas into nonattainment regulation. Even though EPA predicted those new areas would reach the 2014 NAAQS without additional local controls, those areas would be subject to new source permitting requirements that hamper their economic development. Where there is no compelling health benefit from a NAAQS revision – like the 2014 action – EPA should devote resources to attainment of the prior standard.

Thanks for considering this request. Please let me know how to proceed from here.

Lee Fuller

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Energy Star and SNAP Discussion with Appliance Manufacturers
Start Date/Time: Fri 4/28/2017 7:00:00 PM
End Date/Time: Fri 4/28/2017 7:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Meeting proposal: ENERGY STAR is moving a specification on clothes washers, which we oppose. It is critical that I ensure you are aware of what is going on and hopefully stop this action until we can talk in more detail. While this is an urgent matter, it is also very important to discuss the ENERGY STAR program broadly. At a high level, we support its moving back to DOE for our products and have discussed this with the DOE beachhead team. We have CEOs and other senior executives from the entire industry meeting in DC for our Annual Meeting from April 29-May 2. It would be very helpful if we could discuss our issues with you before that. Any time from Tuesday, April 25, to Friday, April 28 would be ideal.

Discussion Topics:

SNAP Rule Allowing Isobutane (EPA-HQ-OAR-2009-0286) & Rule 21 (bans HFCs for refrigerators in 2021)
Microfibers (Trash-Free Waters)

Material Management/Landfill Diversion/Food Waste Disposers
Safe Drink Water
TSCA Reform Support
Counterfeit Water Filters

Attendees:

Kevin Messner, AHAM SVP of Policy & Government Relations

Charlotte Skidmore, AHAM Sr. Dir. of Environment and Sustainability Policy

Jennifer Cleary, AHAM Sr. Dir. of Regulatory Affairs

Contact:

Kevin Messner

Senior Vice President, Policy & Government Relations

Association of Home Appliance Manufacturers

1512 Willow Lane, Davis, CA 95616

1111 19th Street NW, Suite 402, Washington, DC 20036

From: Inge, Carolyn
Location: DCRoomARN3530CFTB/DC-Ariel-Rios-AO
Importance: Normal
Subject: Meeting with NextEra Energy: Reg Reform
Categories: Red Category
Start Date/Time: Mon 5/8/2017 8:00:00 PM
End Date/Time: Mon 5/8/2017 8:30:00 PM

Required: Bolen, Brittany <bolen.brittany@epa.gov>; Jay Cranford cranford@cgcn.com; Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Katie Mitchell <mitchell@cgcn.com>;

Cc: Kime, Robin <Kime.Robin@epa.gov>; Germann, Sandy <Germann.Sandy@epa.gov>; Inge, Carolyn <Inge.Carolyn@epa.gov>; Irving, Verna <Irving.Verna@epa.gov>

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: I'm reaching out on behalf of a coalition of companies, including our client NextEra Energy, who have aligned on a few specific regulatory reform ideas, including WOTUS, NSR, and 316(b).

Attendees

Carrie Jenks, Senior Vice President, MJB&A

Ray Butts, Director of Permitting, NextEra Energy

Lauren Sher, Senior Manager of Governmental Affairs, NextEra Energy

Mark Bowles, Director, Environmental Reporting & Climate, Entergy

Ann Loomis, Director, Federal Public Policy, Dominion

Melissa Lavinson, Vice President, Federal Affairs and Policy and Chief Sustainability Officer, PG&E

Michelle Barlow, Environmental Policy Specialist, PG&E

Contact:

JAY CRANFORD |CGCN GROUP

1101 K STREET, NW, SUITE 650 WASHINGTON, D.C. 20005

202.689.9296 /cranford@cgcn.com /www.cgcn.com

From: Minoli, Kevin
Location: 4045, 6013, 7500, and 7530
Importance: Normal
Subject: Adobe Connect link added: OGC All Hands Meeting (Call in number: 1-866-299-3188, Code: 202-564-5551)
Start Date/Time: Thur 5/4/2017 2:00:00 PM
End Date/Time: Thur 5/4/2017 4:00:00 PM
FY17Q3All Hands Agenda.pdf

Hello OGC:

Anyone connecting to the OGC ALL Hands via Adobe Connect (link below) should not call into the 866 audio conference call in number to avoid sound feedback problems.

We would like to be able to see our remote and teleworking OGC staff on the screen via Adobe Connect, so please turn on your video-cameras for this meeting.

http://epawebconferencing.acms.com/ogcallhands05042017/

OGC Colleagues: The Quarterly All Hands meeting will not be in room 1153 WJC East due to the unavailability of video-teleconference or data connections there due to the renovations of the room. However, we will stick to the May 4 date to give our invited guests time to prepare and certainty on all of our calendars.

We look forward to introducing our new Deputy General Counsels, as well as, other members of the Administrator's Office team. Also, remember if you have any questions you would like addressed by the OGC management team, but are uncomfortable raising them publicly, you should feel free to place them in the OGC suggestion box located in the 7th Floor large pantry. Thank you.

Regions: Please inform RTP on which room you will be using if connecting via video. Thank you.

Office of General Counsel (OGC) Quarterly All-Hands Meeting

May 4, 2017

10AM-12PM

AGENDA

Locations:

- ☐ WJCN 4045
- ☐ WJCN 6013
- ☐ WJCN 7500
- ☐ WJCN 7530
- ☐ Telework/Remote via Adobe Connect:

  http://epawebconferencing.acms.com/ogcallhands05042017/

  Adobe Connect users do not call into the 866 audio conference call in number to avoid sound feedback problems. We would like to be able to see our remote and teleworking OGC staff on the screen via Adobe Connect, so *please turn on your video-cameras for this meeting.*

- ☐ *Please use teleconference only if you have technical difficulty connecting to Adobe Connect.*

Ex. 6 - Personal Privacy

10:00 GROUND "RULES"/HOW THIS WILL WORK.....Rich Albores (in 4045)
INTRODUCTORY REMARKS.....Kevin Minoli (in 4045)

.....Elise Packard (in 6013)

10:15: OGC DEPUTY GC REMARKS.....Justin Schwab (in 7530)
.....David Fotouhi (in 7500)
10:30: INTRODUCTION OF GUESTS.....(in each conference room)
.....Samantha Dravis, Assoc. Administrator OP.....by Kevin Minoli (in 4045)
.....Brittany Bolen, Dep. Assoc. Administrator OP.....by Kevin Minoli (in 4045)
.....Byron Brown, Dep. Chief of Staff OA.....by Elise Packard (in 6013)
.....Mandy Gunasekara, Senior Advisor.....by Justin Schwab (in 7530)
.....Sarah Greenwalt, Senior Advisor.....by David Fotouhi (in 7500)
11:00: QUESTIONS AND ANSWERS WITH GUESTS.....All.....
11:15 CLOSING REMARKS.....Kevin Minoli (in 4045)
11:20 *ADJOURN FOR RITA's ICE CREAM to celebrate Public Service Recognition Week*.....(in 4000)

From: Elam Harden, Sonya
Location: Conference call: Dial in below
Importance: Normal
Subject: SO2 attainment in Indiana
Start Date/Time: Wed 8/9/2017 1:30:00 PM
End Date/Time: Wed 8/9/2017 2:00:00 PM

From: Inge, Carolyn
Location: 3513A
Importance: Normal
Subject: Discussion with Mr. Craig Glidden of GM – Dial 1-855-564-1700; Conf. Ext. 1104438; Code: 234567
Start Date/Time: Mon 4/24/2017 7:00:00 PM
End Date/Time: Mon 4/24/2017 7:20:00 PM

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/25/2017 7:00:00 PM
End Date/Time: Wed 10/25/2017 7:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: I wanted to thank you again for making time in your busy schedule to speak at ISRI's recent CEO meeting. The members and staff found your presentation to be very helpful and engaging. We appreciate the administration's willingness to listen to our ideas and questions. As a follow up to your presentation, we would like to request a brief meeting with you and a small group of ISRI members (and staff). The topic would be the crumb rubber issue. To provide a little more background, there are two CEOs from the biggest synthetic turf/playground companies, (ISRI members), who would like to share their compelling stories with you and get the EPA's perspective moving forward.

Attendees: Billy Johnson; Kristin Strobel; Robin Wiener; Loren Monroe; William Crozer; Chris Bedell, from the David Joseph Company (DJJ)

Contact:

Kristin Strobel
Director of State Affairs
BGR Government Affairs, LLC
BGR | 25 YEARS 1991 - 2016
The Homer Building
Eleventh Floor South
601 Thirteenth Street, NW
Washington, DC 20005
Direct: (202) 661.6324

Fax: (202) 833-9392
kstrobel@bgrdc.com
www.bgrdc.com

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: RFS Meeting with the National Association of Convenience Stores (NACS) and the Society of Independent Gasoline Marketers of America (SIGMA)
Start Date/Time: Fri 4/28/2017 3:30:00 PM
End Date/Time: Fri 4/28/2017 4:00:00 PM

Hi

Please add this from Samantha's calendar, thank you.

Topic: RFS Meeting with the National Association of Convenience Stores (NACS) and the Society of Independent Gasoline Marketers of America (SIGMA)

Date: 4/28

Time: 11:30 – 12:00

Location: 3500 WJCN

Required: tcolumbus@steptoe.com; Bolen, Brittany <bolen.brittany@epa.gov>; Gunasekara, Mandy Gunasekara.Mandy@epa.gov;

Cc: Kime, Robin <Kime.Robin@epa.gov>; Germann, Sandy <Germann.Sandy@epa.gov>

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

4 Attendees:

- Two senior executives from Quik Trip, including the company's chief supply officer
- Timothy Columbus and Eva Rigamonti from Steptoe

Contact:

R. Timothy Columbus, Steptoe & Johnson LLP, 1330 Connecticut Avenue, NW, Washington, D.C. 20036.

(desk) 202-429-6222; (cell) 202-255-5049, e-mail—tcolumbus@steptoe.com

From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: Meeting with the National Automobile Dealers Association
Start Date/Time: Thur 9/14/2017 3:30:00 PM
End Date/Time: Thur 9/14/2017 4:00:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Purpose: Discuss the regulatory structure for mobile source GHGs.

Attendees:

Douglas Greenhaus, NADA regulatory Counsel

Andrew Koblenz, NADA General Counsel

POC:

Douglas Greenhaus

Chief Regulatory Counsel,

Environment, Health, and Safety

National Automobile Dealers Association

dgreenhaus@nada.org

o 703.821.7040

f 703.448.5824

8400 Westpark Drive

Tysons, VA 22102

nada.org

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Regulatory Reform Discussion with Rebecca Rosen and Jeff Weiss
Start Date/Time: Mon 8/7/2017 3:00:00 PM
End Date/Time: Mon 8/7/2017 3:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees: Rebecca Rosen and Jeff Weiss, former Associate Administrator of OIRA under Cass Sunstein.

From: Inge, Carolyn
Location: DCR 3530 WJCN
Importance: Normal
Subject: Meeting with Members of the Trade Association Liaison Council, Manufacturing Action Council, and Regulatory Improvement Council - agenda/attendees attached
Start Date/Time: Tue 5/9/2017 2:00:00 PM
End Date/Time: Tue 5/9/2017 2:45:00 PM
Policy Roundtable with Samantha Dravis.docx

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact:

E. Blair Shipp

Director of Communications

Valis Associates, LLC

1101 17th Street, NW, Suite 608, Washington DC 20036

(O) 202.393.5055 (C) 703.350.2021

Policy Roundtable with Samantha Dravis
EPA's Office of Policy
Tuesday, May 9th at 10AM
William Jefferson Clinton North

Agenda:

Bret Manley, AAR: EPA's proposed denial of petitions to change the RFS Point of Obligation (EPA-HQ-OAR-2016-0544)
Paul Noe, AF&PA: 1) Human Health Water Quality Criteria; (2) Carbon Neutrality of Biomass; (3) Air Permit Streamlining; (4) Government Procurement Policies; and (5) Boiler MACT
Amanda Nguyen & Suzanne Hartigan, IFRA-NA: TSCA, specifically new chemicals review
Cindy Squires & Joe O'Donnell, IWPA: Formaldehyde Emission Standards for Composite Wood Products regulation
Rich Bozek, EEI: Waters of the US and Effluent Guidelines

Attendees:

David	Schwietert	Executive Vice President of Federal and Government Relations and Public Policy	Alliance of Automobile Manufacturers
Marie	Clark	Counsel, Government Affairs	American Coatings Association
MJ	Carrabba	Manager, Government and Industry Affairs	American Composites Manufacturers Association
Paul	Noe	Vice President for Public Policy	American Forest and Paper Association
Bret	Manley	Government Affairs	Association of American Railroads
Charlotte	Skidmore	Senior Director, Environmental & Sustainability Policy	Association of Home Appliance Manufacturers
Jennifer	Cleary	Senior Director, Regulatory Affairs	Association of Home Appliance Manufacturers
Rich	Bozek	Director, Environmental and Health & Safety Policy	Edison Electric Institute
Amanda	Nguyen	Director, Government Affairs & Legal	IFRANA – the fragrance association
Suzanne	Hartigan	Director of Science & Regulatory Policy	IFRANA – the fragrance association
Andrea	Hart	General Counsel	International Bakers Association
Emily	Lyons	Director of Regulatory Affairs and Counsel	International Dairy Foods Association
Joe	O'Donnell	Director, Government Affairs	International Wood Products Association
Cindy	Squires	President & CEO	International Wood Products Association
Kristine	Heine	Consultant	Kohler
Rachel	Jones	Director of Energy and Resources Policy	National Association of Manufacturers
Lorraine	Gershman	Vice President, Regulatory Affairs	National Oilseed Processors Association
Omar	Nashashibi	Government Affairs	Precision Metalforming Association
Robert	Helminiak	Managing Director of Government Relations	Society of Chemical Manufacturers & Affiliates
Ed	Thomas	Director of Regulatory Affairs	The Fertilizer Institute
Dain	Hansen	Senior Vice President of Government Relations	The IAPMO Group
Billy	Johnson	Government Affairs	The Institute of Scrap Recycling Industries, Inc
Kevin	Koonce	Vice President of Government Affairs	The Vinyl Institute
Wayne	Valis	President & CEO	Valis Associates LLC
Maura	Valis	Vice President	Valis Associates LLC
Blair	Shipp	Director of Communications	Valis Associates LLC

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with the Agricultural Retailers Association: General Duty Clause [CAA Section 112(r)(1)]
Start Date/Time: Fri 12/8/2017 7:00:00 PM
End Date/Time: Fri 12/8/2017 7:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Richard Gupton, Agricultural Retailers Association

Jennifer Gibson, National Association of Chemical Distributors

Susan Flanagan, Institute of Makers of Explosives

Jeff Gunnulfsen, American Fuel & Petrochemical Manufacturers

Peter Lidiak, International Liquid Terminals Association

Meeting with the Agricultural Retailers Association (ARA), which represents the nation's agricultural retailer and distributors to meet with a group of trade associations to discuss the General Duty Clause, as codified in section 112(r)(1) of the Clean Air Act. The trade associations that are part of this coalition include ARA, American Fuel & Petrochemical Manufacturers, Corn Refiners Association, Institute of Makers of Explosives, International Liquid Terminals Association, National Association of Chemical Distributors, and National Oilseed Processors Association.

Contact:

Richard Gupton

Senior Vice President, Public Policy & Counsel

Agricultural Retailers Association

Suppliers to America's Farmers

1156 15th Street, NW | Suite 500 | Washington, D.C. 20005

Direct: 202.595.1699 | Main: 202.457.0825 | Fax: 202.457.0864

richard@aradc.org

www.aradc.org

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: BP
Start Date/Time: Mon 4/10/2017 8:30:00 PM
End Date/Time: Mon 4/10/2017 9:00:00 PM

Hi

Would you add this from Samantha's calendar today please.

Verna, would you escort them to the conference room please? Thanks!

Date: Today

Topic: BP

Location: 3500 WJCN

Required: Bolen, Brittany <bolen.brittany@epa.gov>; Gunasekara, Mandy Gunasekara.Mandy@epa.gov; Stout, Robert Robert.Stout@bp.com; mary.streett@bp.com

Time: 4:30 – 5:00 p.m.

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Edward G. Hild: State Permitting for Natural Gas Pipelines when EPA has 404 Authority
Start Date/Time: Wed 4/19/2017 7:00:00 PM
End Date/Time: Wed 4/19/2017 7:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

From: Hild, Edward [mailto:edward.hild@bipc.com]
Sent: Wednesday, March 29, 2017 2:27 PM
To: Kime, Robin <Kime.Robin@epa.gov>
Subject: RE: Question and Meeting Request -Edward G. Hild

Hi Robin – thank you so much for the response on behalf of Samantha. I will take the 3:00 PM slot. Likely joining me will be two colleagues from Buchanan – Robert Shuster and Terry Heubert and Pam Witmer the V.P. for Government Relations at UGI Energy Services. Thanks and again for your assistance and patience, as I recently left the Senate after 20 years and am just adjusting to life downtown. Ed

From: Hild, Edward [mailto:edward.hild@bipc.com]
Sent: Tuesday, March 28, 2017 9:21 AM
To: Dravis, Samantha <dravis.samantha@epa.gov>
Subject: Question and Meeting Request

Hi Samantha – I hope this note finds you well. By way of quick background, I most recently

served as Senator Murkowski's Chief of Staff and for a number of years before that with Senator Domenici. A couple of questions: 1) does the EPA maintain involvement in the state permitting process for natural gas pipelines when EPA has delegated administration of the federal 404 program – a client is asking and if so would a meeting with the right staff/staffers be appropriate, if you are not the correct person? 2) could you please direct me to the appropriate person for a meeting on the North American Emission Control Area for Marine Vessels on behalf of a different client. Thank you for your time and indulgence. I look forward to hearing from you. Ed

Buchanan Ingersoll & Rooney PC
KNOW GREATER PARTNERSHIP

Edward G. Hild
Principal - Government Relations
T 202.452.5480
F 202.452.7989
edward.hild@bipc.com

1700 K Street, N.W.
Suite 300
Washington, DC 20006-3807

BIPC.com | Twitter | LinkedIn

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: RFS and RMP Discussion with Brendan Williams of PBF Energy
Start Date/Time: Wed 4/12/2017 6:30:00 PM
End Date/Time: Wed 4/12/2017 7:00:00 PM

POC: Brendan.Williams@pbfenergy.com

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Brendan Williams

Government Relations

PBF Energy

601 Pennsylvania Avenue, NW

Suite 900 South

Washington, DC 20004

O: (202) 434-8254

M: (703) 863-6825

brendan.williams@pbfenergy.com

www.pbfenergy.com



From: Kime, Robin
Location: 3513A William Jefferson Clinton North
Importance: Normal
Subject: Meeting with Competitive Enterprise Institute President Kent Lassman
Start Date/Time: Fri 9/29/2017 6:30:00 PM
End Date/Time: Fri 9/29/2017 7:00:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact:

Amanda France

Executive Assistant, Competitive Enterprise Institute

Program Manager, Alfred E. Kahn Discussion Series

Producer, *I, Whiskey: The Human Spirit*

202.331.2764

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Larry Schafer - Biodiesel CEOs to Discuss RFS
Start Date/Time: Thur 4/13/2017 5:00:00 PM
End Date/Time: Thur 4/13/2017 5:30:00 PM

Topic: Meeting with Larry Schafer - Biodiesel CEOs to Discuss RFS

Date: 4/13

Time: 1:00 – 1:30

Location: 3500 WJCN (4 attendees)

Attendees:

1. Gene Gebolys, CEO World Energy - 230 million gallons of biodiesel production

2. Jonathan Phillips, COO and General Counsel at Renewable Biofuels, Inc. – 175 million gallons of biodiesel production

3. Scott Lewis, Executive Vice President, Commercial Operations + Strategy - 110 million gallons of biodiesel production

4. Manning Feraci, President Playmaker Strategies

5. Anne Steckel, Vice President of Federal Affairs, National Biodiesel Board

6. Larry Schafer, CEO Playmaker Strategies

Contact:

Larry Schafer

Principal

Playmaker Strategies, LLC

750 Ninth St., NW, Suite 650

Washington, DC 20001

Phone: (202)997-8072

Email: Lschafer@PlaymakerStrategies.com

Www: www.playmakerstrategies.com

From: Larry Schafer [mailto:lschafer@playmakerstrategies.com]
Sent: Wednesday, April 5, 2017 5:22 PM
To: Bolen, Brittany <bolen.brittany@epa.gov>
Cc: Manning Feraci <mferaci@playmakerstrategies.com>
Subject: Follow up -- Request for Meeting - Biodiesel

Brittany,

Hope you are well.

Trying to set up a meeting with your team for next week on biodiesel issues related to the RFS.

Any chance we can catch up with your team for a few minutes on Thursday the 13th or Friday the 14th?

I will have at least three biodiesel CEO's in town at that time and would like to stop by for a short introduction.

Very much appreciated.

Thank you.

==========

<< OLE Object: Picture (Device Independent Bitmap) >>

Larry Schafer

Principal

Playmaker Strategies, LLC

750 Ninth St., NW, Suite 650

Washington, DC 20001

Phone: (202)997-8072

Email: Lschafer@PlaymakerStrategies.com

Www: www.playmakerstrategies.com

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From: Larry Schafer [mailto:lschafer@playmakerstrategies.com]
Sent: Tuesday, April 04, 2017 2:39 PM
To: 'jackson.ryan@epa.gov'

Cc: 'Manning Feraci - Playmaker Strategies (mferaci@playmakerstrategies.com)'
Subject: Follow up -- Request for Meeting - Biodiesel

Ryan,

This is a follow up from last week and clearly you are extremely busy.

Is there any chance we could meet with you or someone on your team to discuss biodiesel issues and the renewable fuels program.

We will be brief and precise – we would like an opportunity to visit about the upcoming rulemaking process.

Thank you.

==========

<< OLE Object: Picture (Device Independent Bitmap) >>

Larry Schafer

Principal

Playmaker Strategies, LLC

750 Ninth St., NW, Suite 650

Washington, DC 20001

Phone: (202)997-8072

Email: Lschafer@PlaymakerStrategies.com

Www: www.playmakerstrategies.com

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From: Larry Schafer [mailto:lschafer@playmakerstrategies.com]
Sent: Wednesday, March 29, 2017 5:15 PM
To: 'jackson.ryan@epa.gov'
Cc: Manning Feraci - Playmaker Strategies (mferaci@playmakerstrategies.com)
Subject: Request for Meeting - Biodiesel

Ryan,

Larry Schafer here with Playmaker Strategies, we represent a handful of companies that produce over 300 million gallons of biodiesel.

Our clients, Gene Gebolys from World Energy and Scott Lewis from Biox will be in Washington DC on Thursday, April 13 and Friday, April 14.

Mr. Gebolys and Mr. Lewis run well-established biodiesel companies -- combined these two companies have plants in five states and Canada (Texas, Mississippi, Georgia, Pennsylvania, Massachusetts and Ontario)

We would like to bring them by for a short meeting to discuss the 2018 Renewable Fuels Standards (RFS) and specifically the Advanced Biofuels part of that program.

Might you have a few minutes to meet on either of those days?

Please let us know. Thank you.

We can be reached by email at Lschafer@playmakerstrategies.com or telephone at 202.997.8072.

==========

Larry Schafer

Principal

Playmaker Strategies, LLC

750 Ninth St., NW, Suite 650

Washington, DC 20001

Phone: (202)997-8072

Email: Lschafer@PlaymakerStrategies.com

Www: www.playmakerstrategies.com

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From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: Meeting with BP America to Discuss Regulatory Reform
Start Date/Time: Mon 8/28/2017 6:30:00 PM
End Date/Time: Mon 8/28/2017 7:00:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

David J. van Hoogstraten, Senior Director, Regulatory Affairs (Environmental)

Robert Stout, Vice president and Head of Regulatory Affairs, BP America

Jim Nolan, Senior Director, Regulatory Affairs, BP America

Contact:

David J. van Hoogstraten

Senior Director, Regulatory Affairs (Environmental)

BP America Inc.

1101 New York Avenue, NW

Washington, DC 20005

Direct: 202 457 6596

Mobile: 202 277 5840

From: Dominguez, Alexander
Location: 1200 Pennsylvania Avenue, NW (North) - Room 1332 WJCN
Importance: Normal
Subject: Small Refineries (re: RFS hardship exemption)
Start Date/Time: Tue 8/15/2017 2:00:00 PM
End Date/Time: Tue 8/15/2017 3:00:00 PM
houseFY18e&wreportlanguage.pdf

Location: 1200 Pennsylvania Avenue, NW (North) - Room 1332 WJCN

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.

EPA Contact: For an escort from Security to the meeting call 202-564-1016 or 202-578-5985

Request:

A coalition of small refineries would like to discuss the RFS hardship exemption.

Attendees:

To follow

Contact:

Susan Butler

Capitol Resources LLC

915 Prince Street

Alexandria, VA 22314

(703)739-5860 (office)

(703)298-2826 (cell)

From: Bolen, Brittany
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with the Consumers Union re: NGOs Regarding GHG Standards for Vehicles
Start Date/Time: Tue 8/1/2017 6:00:00 PM
End Date/Time: Tue 8/1/2017 6:45:00 PM
2017.5.30 EPA meeting request.pdf

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Carol Lee Rawn

Jack Gillis

Therese Langer

Shannon Baker-Branstetter

David Friedman

Request: Please see attached. A brief meeting to discuss the consumer, investor, and economic implications of potential changes to the GHG standards for light-duty vehicles.

Contact:

Shannon Baker-Branstetter

Policy Counsel, Energy and Environment

Consumers Union, Policy and Action from Consumer Reports

1101 17th Street, NW, Suite 500

Washington, DC 20036

office: 202.462.6262

direct: 202.238.9253

cell: 571.225.8128



Consumer Federation of America

ConsumersUnion
POLICY & ACTION FROM CONSUMER REPORTS

ACEEE
American Council for an Energy-Efficient Economy

May 30, 2017



Ceres
Sustainability is the bottom line.

Administrator Scott Pruitt
Environmental Protection Agency
Office of the Administrator #1101A
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Administrator Pruitt:

On behalf of the American Council for an Energy-Efficient Economy, Ceres, Consumer Federation of America, and Consumers Union, we request a meeting with you to discuss the consumer and economic benefits of light-duty vehicle greenhouse gas standards administered by the EPA.

As you know, the 2017-2025 standards were agreed upon in 2011 by a remarkably diverse group of stakeholders. Automakers, suppliers, small business, labor, investor, consumer, efficiency, and national security groups, were all represented in the decision-making process. Last month, news reports indicated an association representing automakers met with you to present its perspective and requests for your agency's action on the second phase of the program for MY 2022-2025. As the mid-term review for the second phase moves forward, our groups would also like the opportunity to present our perspectives, research, and data to inform the decision-making process prior to the issuance of the determination.

Greenhouse gas standards for light-duty vehicles are critically important to lowering fuel costs for struggling middle class families across the country, have been proven to support job creation and innovation, and, of course, improve air quality. Weakening the standards will have a damaging impact on the global and national competitiveness of U.S. auto industry, consumer welfare, and the American economy at large.

We look forward to hearing from your office in the near future confirming your interest and availability to meet with us. Please contact Shannon Baker-Branstetter at 202-462-6262 or sbaker-branstetter@consumer.org. Thank you for your time.

Sincerely,

Shannon Baker-Branstetter
Policy Counsel
Consumers Union

Carol Lee Rawn
Director of Transportation
Ceres

Jack Gillis
Director of Public Affairs
Consumer Federation of America

Therese Langer
Transportation Program Director
American Council for an Energy-Efficient Economy

From: Bolen, Brittany
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Follow-up Meeting with Iron & Steel re: NSR
Start Date/Time: Mon 8/21/2017 7:30:00 PM
End Date/Time: Mon 8/21/2017 8:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Objective: Discuss the NSR program.

Contact:

Paul Balserak

Vice President, Environment

American Iron and Steel Institute

25 Massachusetts Ave. NW, Suite 800

Washington, DC 20001

202 452-7122 (office)

703 969-1789 (mobile)

From: Bolen, Brittany
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Presidents of North America's Building Trades Union and United Association: Permitting and Construction of Infrastructure
Start Date/Time: Wed 8/30/2017 6:00:00 PM
End Date/Time: Wed 8/30/2017 6:45:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees: TBD

Request: On behalf of the combined 3.5 million members of the United Association (UA) and North America's Building Trade Unions (NABTU), I request the pleasure of a meeting with you, President Mark McManus of LIUNA and President Sean McGarvey of NABTU on July 5th 2017. UA and NABTU members care about infrastructure; and that is what we would like to discuss with you. Our members often benefit from the good paying jobs that are a byproduct of development and deployment of all types of infrastructure, from pipelines, to highways and waterways. UA and NABTU have a track record of supporting projects that will create union jobs and we maintain an all of the above approach to energy development.

We are particularly enthused to see the department's efforts to streamline project permitting. An acceleration of permitting and construction of infrastructure carries with it the potential to create thousands of jobs with extensive economic multiplier effects across the United States economy. Specifically we would like to discuss how we work together on the Administration's infrastructure development agenda and share our ideas for public policy that will further our mutual goals: jobs and a growing economy.

Contact:

Casey O'Shea

FTI Consulting

+1.202.346.8812 T | +1.202.441.6019 M

From: Bolen, Brittany
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Call with Joe Stanko to Discuss Ozone - Call: 1-855-564-1700; Extension: 1104438; Participant Code: 234567
Start Date/Time: Tue 7/25/2017 2:30:00 PM
End Date/Time: Tue 7/25/2017 3:00:00 PM

HUNTON& WILLIAMS **Joseph Stanko**

Partner

jstanko@hunton.com
p 202.955.1529

bio | vCard

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

From: Kime, Robin
Location: 3513A
Importance: Normal
Subject: Mining Sector Rules
Start Date/Time: Wed 4/5/2017 3:15:00 PM
End Date/Time: Wed 4/5/2017 3:45:00 PM

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with the Association of Home Appliance Manufacturers to Discuss HFCs and the SNAP Program
Start Date/Time: Wed 9/27/2017 5:00:00 PM
End Date/Time: Wed 9/27/2017 5:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees: TBD

Request: I'm sure you saw the recent court ruling on HFCs and the SNAP program and I know you are busier than heck, but it really would be beneficial if I could meet with you on this when I am in DC the week of Aug 21. We are already hearing from senior leaders from our appliance manufacturers. Can you meet with me to discuss this? I am not expecting any final decisions from you at this early stage. I just think we need to understand the possible scenarios and possible impacts of each as you weigh your options. I will be meeting with CARB shortly, too. PS - also as a heads up we are discussing the likelihood of some of our CEOs coming to DC in Sept/Oct to meet with a few key Trump Administration leaders, and Administrator Pruitt would hopefully be one of those meetings we would be able to coordinate.

Contact:

Kevin Messner

Senior Vice President, Policy & Government Relations

Association of Home Appliance Manufacturers

1512 Willow Lane, Davis, CA 95616

1111 19th Street NW, Suite 402, Washington, DC 20036

t 202.872.5955 ext. 353 *m* 530.309.5629 *f* 202.872.9354 *e* kmessner@aham.org

From: Dominguez, Alexander
Location: 1200 Pennsylvania Avenue, NW (North) - Room 3528 WJCN
Importance: Normal
Subject: Meeting - WPX Energy
Start Date/Time: Wed 7/26/2017 4:00:00 PM
End Date/Time: Wed 7/26/2017 4:30:00 PM

Location: 1200 Pennsylvania Avenue, NW (North) - Room 3528 WJCN

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.

EPA Contact: For an escort from Security to the meeting call 202-564-1016 or 202-578-5985

Request:

Concerned about the QuadOa regulations and affects on WPX Energy's operations.

http://www.wpxenergy.com/

Attendees:

Jeff Wilson WPX Energy

Bill McGrath BHFS

Luke Johnson BHFS

Contact:

William J. McGrath

Brownstein Hyatt Farber Schreck, LLP

1155 F Street N.W., Suite 1200

Washington, DC 20004

202.383.4703 tel

wmcgrath@bhfs.com

From: Inge, Carolyn
Location: DCRoomARN3530CFTB/DC-Ariel-Rios-AO
Importance: Normal
Subject: Meeting with EEI's Environmental Leadership CEOs
Start Date/Time: Thur 4/13/2017 2:00:00 PM
End Date/Time: Thur 4/13/2017 2:45:00 PM

Hi

Would you add this from Samantha's calendar please? Thanks

Topic: Meeting with EEI's Environmental Leadership CEOs

Date: 4/13

Time: 10:00-10:45

Location: 3530 WJCN or one of the rooms above it (12 external attendees)

Required: Bolen, Brittany bolen.brittany@epa.gov; qshea@eei.org; CTrueheart@eei.org

Cc: Kime, Robin <Kime.Robin@epa.gov>; Germann, Sandy <Germann.Sandy@epa.gov>;Inge, Carolyn <Inge.Carolyn@epa.gov>; Irving, Verna <Irving.Verna@epa.gov>

Attendees:

- Chuck Barlow, Entergy

- Skiles Boyd, DTE Energy
- Maureen Gannon, PNM Resources
- Jack Ihle, Xcel Energy
- Ann Loomis, Dominion
- John McManus, AEP
- Louis Renjel, Duke Energy
- Usha Turner, OG&E
- Cathy Woollums, Berkshire Hathaway Energy

- Emily Fisher, EEI General Counsel
- Quin Shea, VP, Environment
- Kathy Steckelberg, VP, Government Affairs

Emily Fisher, EEI General Counsel

Quin Shea, VP, Government Affairs

Kathy Steckelberg, VP, Government Affairs

From: Shea, Quin [mailto:QShea@eei.org]
Sent: Tuesday, April 4, 2017 9:27 AM
To: Dravis, Samantha <dravis.samantha@epa.gov>
Subject: RE: Following Up on EEI Board Meeting

Good morning Samantha. Recognizing that the overall situation at the agency remains fluid and a beehive of activity, I nonetheless trust that you are easing in and fully in control!

We've been communicating regularly with OG&E's Sean Trauschke, who in turn spoke recently with Ryan about scheduling a meeting between the Administrator and EEI's environmental leadership CEOs. We'll work directly with Ryan on the specifics of that session. In the interim, however, these same CEOs are requesting that EEI assemble a small group of their senior company staff to come in and meet with you and your colleagues. From our perspective, this session would focus on key substantive and process (e.g., permitting and siting) issues, as well as the general EPA institutional landscape. When you get a moment, could you call me to discuss this item?

Thanks again for your past courtesies and I look forward to speaking with you soon. Best, Quin

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact:

Quinlan J. Shea, III (Quin)

Vice President, Environment

Edison Electric Institute

701 Pennsylvania Avenue, NW

Washington, DC 20004

202-508-5027

qshea@eei.org

From: Gunasekara, Mandy
Location: 1200 Pennsylvania Avenue, NW (North) Please call 202-564-1016 for escort (3528)
Importance: Normal
Subject: Meeting - Invariant/EPA
Start Date/Time: Thur 7/20/2017 6:00:00 PM
End Date/Time: Thur 7/20/2017 6:45:00 PM

Location: 1200 Pennsylvania Avenue, NW (North) - Room 3528 WJCN

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.

EPA Contact: For an escort from Security to the meeting call 202-564-1016 or 202-578-5985

Request:

Meeting request as the Administrator is unavailable with Hudson Technologies.

Montreal Protocol phase outs and allocations, as well as SNAP

Attendees:

Kevin Zugibe, President and CEO, Hudson Technologies

Brian Coleman, COO and Director, Hudson Technologies

Ben Klein, Invariant

Kelli Ripp, Invariant

Contact:

Kelli Ripp

Invariant

202.742.1925 O

309.678.2434 M

ripp@invariantgr.com

(Heather Podesta + Partners is now Invariant)

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Arconic/CAFE
Start Date/Time: Thur 4/6/2017 7:30:00 PM
End Date/Time: Thur 4/6/2017 8:00:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Hi Russell –

Thanks for your email. I'm happy to meet with you and the Arconic folks. Carolyn, please work with Russell to schedule a time for Samantha and I to meet with them on Thursday.

Best,

Brittany

Brittany Bolen

Deputy Associate Administrator, Office of Policy

U.S. Environmental Protection Agency

From: Thomasson, Russell (WAS-CAS) [mailto:RThomasson@cassidy.com]
Sent: Monday, April 3, 2017 8:49 AM
To: Bolen, Brittany <bolen.brittany@epa.gov>
Subject: Arconic/CAFE meeting request

Hi Brittany, I don't think we ever met when we were on the Hill, but I worked for Cornyn for a long time until I decided to headed to the swamp. Ryan gave me your name and said you were working CAFE issues. We represent Arconic (they spun off from Alcoa) which manufactures aluminum parts for the automotive industry. They are a $12.5 billion company with 23,000 employees across the United States. They are very interested in the CAFE way forward and wanted to come in and give someone their input as major a supplier to the auto industry. Could I bother you for a meeting on Thursday, April 6? I would be happy to work around your schedule. It would be me and a represenative from Arconic. Thanks for your consideration. Russ

Russell J. Thomasson
Executive Vice President
733 Tenth Street, NW, Suite 400
Washington, DC 20001

202.585.2554 (direct)
202.826.4491 (cell)
www.cassidy.com

CASSIDY&ASSOCIATES

This message contains information which may be confidential and privileged. Unless you are the intended recipient (or authorized to receive this message for the intended recipient), you may not use, copy, disseminate or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply e-mail, and delete the message

From: Kime, Robin
Location: 3513A
Importance: Normal
Subject: Call with Dennis Hedke - Dial: 316-295-4675
Start Date/Time: Fri 7/28/2017 5:00:00 PM
End Date/Time: Fri 7/28/2017 5:30:00 PM

Contact: dehed2 <dehed2@gmail.com

From: Drue Pearce
Location: 3500 WJCN
Importance: Normal
Subject: Mr. Ed Kerr, Armstrong, with Sarah Greenwalt and Samantha Dravis at EPA; accompanied by H&H's Kyle Parker and Drue Pearce (tentative) with Kelly Johnson (tentative) Meeting is at 11:15 AM
Start Date/Time: Thur 3/30/2017 3:15:00 PM
End Date/Time: Thur 3/30/2017 4:00:00 PM

Please bring your IDs and enter EPA at the WJC North entrance, to the right of the federal triangle metro entrance off 12th street. Ideally allow 10 minutes to clear Security. Have them call 202-564-4332 to be escorted to the conference room, 3500 WJC N.

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Brian Jennings, Executive VP of ACE to Discuss Biofuel Priorities
Start Date/Time: Wed 7/19/2017 7:30:00 PM
End Date/Time: Wed 7/19/2017 8:00:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Brian Jennings, Executive Vice President of the American Coalition of Ethanol

Jonathon Lehman, Consultant for the American Coalition for Ethanol.

Request: Brian Jennings, executive vice president of ACE, is going to be in town next week. We wanted to touch base and see whether we could pop in and visit with you about ACE biofuel priorities given we were able to connect during the ACE fly-in in March.

Contact:

Jonathon Lehman <jonathon@americancapitolgroup.com>

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meet and Greet with the Vinyl Institute
Start Date/Time: Thur 3/30/2017 4:15:00 PM
End Date/Time: Thur 3/30/2017 4:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Would you add this from Samantha's calendar tomorrow please? Thanks

Topic: Meet and Greet with the Vinyl Institute

Date: Tomorrow – 3/30

Time: 12:15-12:30

Location: 3500 WJCN

Required: sjolly@spgdc.com; Bolen, Brittany bolen.brittany@epa.gov

Cc: Kime, Robin <Kime.Robin@epa.gov>; Germann, Sandy <Germann.Sandy@epa.gov>;Inge, Carolyn <Inge.Carolyn@epa.gov>; Irving, Verna <Irving.Verna@epa.gov>

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact:

Stuart Jolly

President

LTC, US Army (ret)

Sonoran Policy Group, LLC

Mobile: 405-514-0514

sjolly@spgdc.com

http://www.spgdc.com

From: Bolen, Brittany
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Tesla to Discuss MTE Process Fuel Economy Standards
Start Date/Time: Tue 7/25/2017 6:30:00 PM
End Date/Time: Tue 7/25/2017 7:00:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees: Joseph Mendelson

Request: Connecting at the urging of Mandy to discuss the MTE process and all things fuel economy/GHG vehicle standards.

Contact: Joseph Mendelson | Senior Counsel | Policy and Business Development
601 13th Street, NW, 9th Fl. N. | Washington, DC 20005
c 703.244.1724 | e jmendelson@tesla.com

TESLA

From: Inge, Carolyn
Location: 3513A
Importance: Normal
Subject: Call w/ Pete Regan Dial In# (712) 770-4010 Access ID:983512
Start Date/Time: Fri 3/31/2017 2:00:00 PM
End Date/Time: Fri 3/31/2017 2:15:00 PM

Hi Carolyn,

Here is the information for this Friday's call at 10am ET with Pete Regan.

Dial In #: (712) 770-4010

Access ID: 983512

Thank you for helping get this set. We appreciate you all.

Regan

Regan Robertson

DEPA

Domestic Energy Producers Alliance

4124 S Rockford Ave. Ste 201

Tulsa, OK 74105

Telephone: 918-293-3921

rrobertson@depausa.org

www.depausa.org

-----Original Appointment-----
From: Inge, Carolyn [mailto:Inge.Carolyn@epa.gov] **On Behalf Of** dravis.samantha@epa.gov
Sent: Wednesday, March 29, 2017 7:46 AM
To: Regan Robertson; Pete Regan
Cc: Inge, Carolyn; Kime, Robin; Irving, Verna
Subject: Request for a 10 min Call w/ Pete Regan
When: Friday, March 31, 2017 10:00 AM-10:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: 3513A

Hi Regan,

Thanks for the follow up. Yes, Carolyn please schedule some time for a call.

I will plan to attend the reception.

Best,

Samantha

From: rrobertson@depausa.org [mailto:rrobertson@depausa.org]
Sent: Tuesday, March 28, 2017 2:31 PM
To: Dravis, Samantha <dravis.samantha@epa.gov>
Cc: Pete Regan <pregan@depausa.org>; Inge, Carolyn <Inge.Carolyn@epa.gov>
Subject: Request for 5 min Call

Hi Ms. Dravis!

Hope you are doing well. I have a couple things for you:

1. Attached is document Pete Regan provided when you met at EPA on Tuesday, March 7.

Pete would like to know if you have time for a brief (5-10 mins) phone call in the next couple days in regards to the memo.

2. General Pruitt is joining DEPA for a small reception next Monday, April 3 at 5:30pm, and we would love for you to come by if your schedule permits. We are confirming location today and I will share as soon as we do so!

Thank you so much for your time and I look forward to being in touch.

Respectfully,

Regan Robertson

Regan Robertson

DEPA

Domestic Energy Producers Alliance

4124 S Rockford Ave. Ste 201

Tulsa, OK 74105

Telephone: 918-293-3921

rrobertson@depausa.org

www.depausa.org

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Scott Jepsen Vice President of External Affairs for ConocoPhillips Alaska - Call: 1-855-564-1700; Extension: 1104438; Participant Code: 234567
Start Date/Time: Wed 7/19/2017 6:00:00 PM
End Date/Time: Wed 7/19/2017 6:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: Scott Jepsen will be in town to testify before the House Energy and Minerals Subcommittee on Tuesday and I wanted to bring him in to discuss the Small Remote Incinerators issue. We have talked a little about this previously and we wanted to follow up. Scott is Vice President of External Affairs for ConocoPhillips Alaska and has been with the company for a very long time. We would welcome the opportunity to meeting with you.

Attendees:

In the room:

Kevin Avery, Federal Government Affairs

Kjersten Drager, Federal Government Affairs

Scott Jepsen, V.P. External Affairs, Alaska

On phone (Alaska):

David Wulf, Manager, Health, Safety and Environment

Brad Thomas, New Development Coordinator

Jon Goltz, Counsel, Alaska (tentative)

Contact: Kevin J. Avery

Manager, Federal Government Affairs

ConocoPhillips

325 7th Street, N.W., 12th Floor

Washington, D.C. 20004

202-833-0914 (Direct)

202-304-0467 (Mobile)

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Regulatory Reform Meeting
Start Date/Time: Tue 8/8/2017 2:30:00 PM
End Date/Time: Tue 8/8/2017 3:00:00 PM

From: Dominguez, Alexander
Location: Location: 1200 Pennsylvania Avenue, NW (North) - Room 1332 WJCN
Importance: Normal
Subject: Meeting -US Poultry and Egg Association
Start Date/Time: Tue 7/11/2017 5:00:00 PM
End Date/Time: Tue 7/11/2017 5:30:00 PM
DC Circuit 7-3-17.pdf

Location: 1200 Pennsylvania Avenue, NW (North) - Room 1332 WJCN

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.

EPA Contact: For an escort from Security to the meeting call 202-564-1016 or 202-578-5985

Request:

Follow up on CERCLA/EPCRA litigation regarding CAFOs air emission court decision

(Waterkeeper Alliance, et al. v. EPA, No. 09-1017, April 11, 2017).

One highly pertinent and timely item of which Mandy should be aware is Tuesday's (July 3) DC Circuit's denial of the industry's petition for a rehearing of the court's earlier decision on the agency's EPCRA/CERCLA reporting exemption. The 1-page order is attached for reference.

Attendees:

Paul Bredwell, US Poultry & Egg Association

Michael Formica, National Pork Producers Council

Tom Hebert, United Egg Producers

Christian Richter, US Poultry & Egg Association / National Turkey Federation

Andrew Walmsley, American Farm Bureau Federation

Scott Yager, National Cattlemen's Beef Association

Jamie Jonker, National Milk Producers Federation

Lisa Van Doren, National Council of Farmer Cooperatives

Contact:

Christian Richter

U.S. Poultry & Egg Association

National Turkey Federation

The Policy Group

1800 M Street NW

Suite 400 South

Washington, DC 20036

(202) 257-0250 direct

crichter@thepolicygroup.com

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 09-1017 **September Term, 2016**

EPA-73FR76948

Filed On: July 3, 2017

Waterkeeper Alliance, et al.,

Petitioners

v.

Environmental Protection Agency,

Respondent

National Chicken Council, et al.,
Intervenors

Consolidated with 09-1104

BEFORE: Brown and Srinivasan, Circuit Judges; Williams, Senior Circuit Judge

O R D E R

Upon consideration of the petition of respondent-intervenors National Pork Producers Council's ("NPPC") and U.S. Poultry & Egg Association's ("U.S. Poultry") for panel rehearing filed on June 2, 2017; and petitioners' motion to strike Declaration of Timothy R. Gablehouse filed by NPPC and U.S. Poultry in support of their petition for rehearing, the opposition thereto, and the reply, it is

ORDERED that the petition be denied. It is

FURTHER ORDERED that the motion to strike be dismissed as moot.

Per Curiam

FOR THE COURT:
Mark J. Langer, Clerk

BY: /s/
Michael C. McGrail
Deputy Clerk

From: Dominguez, Alexander
Location: 1200 Pennsylvania Avenue, NW (North) - Room 3528 WJCN
Importance: Normal
Subject: Noble Energy/EPA
Start Date/Time: Thur 7/20/2017 8:30:00 PM
End Date/Time: Thur 7/20/2017 9:00:00 PM

Location: 1200 Pennsylvania Avenue, NW (North) - Room 3528 WJCN

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.

EPA Contact: For an escort from Security to the meeting call 202-564-1016 or 202-578-5985

Request:

Discuss Ozone and OOOOa

Attendees:

Bob Bemis, Kate Fay and Chad Calvert – all with Noble Energy.

Contact:

Kate Fay

Manager, Environmental and Regulatory Policy

Noble Energy, Inc.

1625 Broadway, Suite 2200

Denver, Colorado 80202

303.910.2830 (cell)

720.587.2397 (office)

From: Dominguez, Alexander
Location: 1200 Pennsylvania Avenue, NW (North) - Room 3528 WJCN
Importance: Normal
Subject: Meeting - Marathon/EPA (re: Tier 3 Gasoline)
Start Date/Time: Thur 7/13/2017 1:15:00 PM
End Date/Time: Thur 7/13/2017 2:00:00 PM

Location: 1200 Pennsylvania Avenue, NW (North) - Room 3528 WJCN

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.

EPA Contact: For an escort from Security to the meeting call 202-564-1016 or 202-578-5985

Request:

On Thursday, July 13, our Fuels Manager, Fred Walas, will be in Washington D.C. I wanted to see if you would be available to meet with us on Thursday morning to discuss Tier 3 gasoline and do a 101.

Attendees:

Michael Birsic – Government Affairs at Marathon

Guy Beeman – Government Affairs at Marathon

Fred Walas - Fuels Technology Manager at Marathon

Contact:

Michael Birsic

Marathon Petroleum Corporation

1201 F Street, NW, Suite 625

Washington, DC 20004

Direct: 202-442-2459

Cell: 202-213-2548

Fax: 202-442-2492

mjbirsic@marathonpetroleum.com

From: Dominguez, Alexander
Location: 1200 Pennsylvania Avenue, NW (North) - Room 3528 WJCN
Importance: Normal
Subject: Daimler North America / EPA
Start Date/Time: Wed 7/5/2017 6:00:00 PM
End Date/Time: Wed 7/5/2017 6:30:00 PM

Location: 1200 Pennsylvania Avenue, NW (North) - Room 3528 WJCN

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.

EPA Contact: For an escort from Security to the meeting call 202-564-1016 or 202-578-5985

Request:

Hi Mandy-

Hope all is well with you. We were slated to host your boss in a week or so over at our Mercedes-Benz USI plant in Alabama, but unfortunately the scheduling kind of unraveled and it's a no-go. Hopefully we find another date down the road!

In the meantime, I was wondering if you might have some time to meet with me and my colleague, Bill Craven who handles regulatory affairs? Bill is really the point person here in DC for Mercedes-Benz on all things GHG, Mid-Term Review-related. Was wondering if you have some time over the next week or so for a meeting? I know Bill would like to meet you and give you an update on our views related to GHG/CAFE issues.

Attendees:

To follow

Contact:

Joanna Foust
General Manager--Federal Affairs
Daimler North America Corp.
1717 Pennsylvania Avenue, NW Suite 825
Washington, DC 20006
ph: 202-649-4506
cell: 202-281-9109

From: Kime, Robin
Location: Call Todd at 206-963-3409
Importance: Normal
Subject: Intro Call with Todd Myers of the Washington Policy Center
Start Date/Time: Wed 8/23/2017 7:00:00 PM
End Date/Time: Wed 8/23/2017 7:30:00 PM

tmyers@washingtonpolicy.org

August 10 at 1:30 East Coast/10:30 Pacific.

Todd Myers

Environmental Director | Washington Policy Center

(206) 963-3409 | tmyers@washingtonpolicy.org

www.washingtonpolicy.org | @WAPolicyGreen

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with WM Waste Management: Clean Air Act Rules for MSW Landfills
Start Date/Time: Thur 4/13/2017 7:00:00 PM
End Date/Time: Thur 4/13/2017 7:45:00 PM
Letter to EPA Acting Officials - Petition for Reconsideration Enclosed (....pdf
Landfill Air Rules Summary.docx

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Dear Ms. Dravis and Mr. Sugiyama:

At the suggestion of Al Collins of Occidental Petroleum (Oxy), who met with you last week and now sings your praises, I am writing to request a meeting with you at your earliest convenience to discuss a set of rules promulgated by EPA pursuant to Section 111 (b) and (d) of the Clean Air Act that impose revised performance standards for both new and existing municipal solid waste (MSW) landfills. The regulations were promulgated as part of President Obama's *Climate Action Plan: Strategy to Reduce Methane Emissions*.

Waste Management, along with Republic Services, the National Waste & Recycling Association and the Solid Waste Association of North America (associations representing both public and private organizations and professionals) identified a number of substantial issues of law and policy with the new rules, including overlap and conflict with existing rules governing the same landfill sources. We have asked EPA to stay, reconsider and revise the two climate-related rules. We petitioners have also challenged the new rules in the U.S. Court of Appeals for the D.C. Circuit.

The landfill rules share similarities with other regulations that EPA may reevaluate, including the Clean Power Plan and Oil & Gas Rules:

•□□□□□□ The new rule for existing landfills relies on the same Section 111(d) authority for which the Clean Power Plan has been criticized; and

•□□□□□□ The cost/benefit analyses underpinning the more stringent performance standards in the rules rely heavily on the "social cost of methane," which is derived from the "social cost of carbon."

Should the Agency decide to rethink those elements in other rules, we believe it would be advisable to reconsider the landfill rules as well. Although we petitioners are prepared to move forward with the judicial challenge, we believe a reconsideration of the rules could lead to a better outcome without the need for litigation. While rule revisions are our ultimate goal, an administrative stay of the rules under the Administrative Procedures Act is critical to avoid forcing the regulated community and the states to begin implementing these flawed rules. Many states are already engaged in developing their mandated state plans for implementation, which are due to the EPA by May 30, so our request for a meeting is time-critical.

I am attaching a recent letter we petitioners sent to EPA prior to Administrator Pruitt's confirmation. It includes our somewhat lengthy administrative petitions. I would be happy to follow-up next week by phone to identify a convenient time on your doubtless busy schedules. Several participants will be coming from out of town, including a former colleague of Mr. Sugiyama, Mack McGuffey of Troutman Sanders, but we can be flexible in accommodating your schedules.

Thank you in advance, and I very much look forward to meeting you.

Kerry Kelly

Contact:

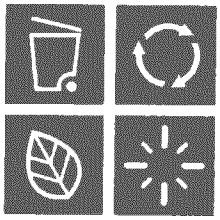
Kerry Kelly KKelly5@wm.com

Waste Management

701 Pennsylvania Ave., NW, #590

Washington, DC 20004

202.639.1218



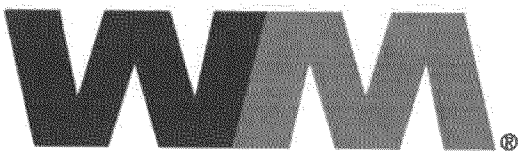
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WASTE MANAGEMENT



REPUBLIC SERVICES

January 30, 2017

Via Overnight Mail

The Honorable Catherine McCabe
Acting Administrator
United States Environmental Protection Agency
Office of the Administrator, Mail Code 1101A
1200 Pennsylvania Avenue, N. W.
Washington, DC 20460

Sarah Dunham
Acting Assistant Administrator
United States Environmental Protection Agency
Office of Air and Radiation, Mail Code 6101A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Kevin Minoli
Acting General Counsel
United States Environmental Protection Agency
Office of General Counsel
1200 Pennsylvania Avenue, N.W.
WJC North Building, Suite 4000
Washington, DC 20460

RE: Pending Petition for Administrative Reconsideration, Rulemaking, and Stay of the Landfill New Source Performance Standards and Emission Guidelines

Dear Ms. McCabe, Ms. Dunham, and Mr. Minoli,

On October 27, 2016, representatives of the waste management sector (both public and private organizations) asked EPA to reconsider, revise, and stay two climate change related rules promulgated

17cv01906 Sierra Club v. EPA ED_001523_00005679-00001

by EPA pursuant to Section 111 of the Clean Air Act that impose revised performance standards on both new and existing municipal solid waste landfills respectively entitled, "*Standards of Performance for Municipal Solid Waste Landfills*," 81 Fed. Reg. 59332-59384 (Aug. 29, 2016), and "*Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills*," 81 Fed. Reg. 59276-59330 (Aug. 29, 2016). Both regulations were promulgated as part of President Obama's *Climate Action Plan: Strategy to Reduce Methane Emissions*.

Because we have not received any response from EPA on the petition to date, and in recognition of the recent change in leadership at EPA, we have enclosed the petition for your review. As you will note, the petition identifies numerous and substantial questions of law and policy with the new rules, including the way the rules overlap and conflict with existing rules governing the source category.

We also wanted to draw your attention to similarities that these landfill rules share with other regulations that EPA may reevaluate, in particular EPA's Clean Power Plan and Oil & Gas Rules. For example, the cost-benefit analysis underpinning the landfill rules heavily relies on EPA's "social cost of methane" framework (derived from the Agency's "social cost of carbon" framework) that has been the subject of much debate and criticism. In addition, EPA's new rule for existing landfills relies on the same Section 111(d) authority for which EPA has been heavily criticized in the context of the Clean Power Plan. To the extent that EPA decides to discontinue the Agency's use of the "social cost of methane" or follows a more restrained interpretation of its Section 111(d) authority, EPA should likewise reconsider the landfill rules cited above.

In addition to filing the enclosed administrative petition with the Agency, the petitioners have challenged the new landfill rules in the U.S. Court of Appeals for the D.C. Circuit, and the parties will shortly need to propose a briefing schedule to the Court. Although the petitioners are prepared to proceed with the judicial challenge, we believe that a reconsideration of the rules could lead to an appropriate outcome without the need for litigation. Therefore, we request that EPA grant the enclosed petition and work with the waste management sector to develop a revised rule.

As set forth in the enclosed petition, the petitioners request that EPA issue an administrative stay of the rules using its authority under the Administrative Procedure Act. Although rule revisions are our ultimate goal, a stay is critical to avoid forcing the regulated community and states across the country to begin the process of implementing a set of rules that may ultimately change, which would result in a significant waste of resources. Such a stay would therefore be a particularly cost-effective administrative step, and would also be consistent with the January 20, 2017 directive from Reince Priebus, Assistant to the President and White House Chief of Staff, that all agency and department heads consider proposing for notice and comment a rule to delay the effectiveness of regulations presenting substantial questions of law or policy.

We recognize that many tasks will demand your attention in this time of transition, but hope you will recognize the need for swift action in this case. Fortunately, EPA can quickly and easily eliminate the time pressure with respect to the landfill performance standards by granting the enclosed

petition. Should you have any questions regarding this correspondence, please contact any of the undersigned at your convenience.

Respectfully submitted,

/s/ Kevin J. Kraushaar
Kevin J. Kraushaar
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PETITION FOR RULEMAKING, RECONSIDERATION, AND ADMINISTRATIVE STAY

DOCKET I.D. EPA-HQ-OAR-2003-0215; EPA-HQ-OAR-2014-0451

TABLE OF CONTENTS

I. Introduction 1

II. Petitioners' Background 2

III. Petition for Rulemaking 4

A. Overlapping Applicability of Old and New Subparts 5

B. Design Plan and Alternatives Approval Process 11

1. The Final Rules Do Not Ensure Agency Review or Approval of Design Plans 12

2. The Final Rules Provide no Clarity on Whether Landfills Must Proceed with GCCS Installation in the Absence of Agency Approval 14

3. EPA's Design Plan Approval Process Subjects Affected Facilities to Unclear Compliance Obligations and Untenable Financial and Enforcement Risk 15

4. EPA Must Correct the Rules to Require Affirmative Agency Approval in a Timely Manner 17

C. Non-Producing Areas 18

1. The Final Rules Should Allow for the Capping, Removing, and Decommissioning of GCCS From Non-Producing Areas of Active and Closed Landfills 19

2. EPA's Definition of "Closed Area" Is Needlessly Narrow 20

3. The Final Rules Should Allow for Surface Emission Monitoring to Support Removal or Decommissioning of a GCCS 22

D. EPA Should Adopt a Clear Definition of Cover Penetrations 24

IV. Petition for Reconsideration 26

A. Tier 4 28

1. Tier 4 Should Not Be Limited to Landfills With Modeled NMOC Emission Rates Between 34-50 Mg/year 30

2. New Wind-Related Restrictions On Tier 4 Monitoring Are Unsupported 31

a. Lack of Scientific Basis for Wind-Speed Restrictions 32

b. Wind-Speed Restrictions Are Unduly Burdensome 34

3. Other Tier 4 Issues 37

a. Tier 4 Monitoring Procedures Should Include Corrective Action 37

b. The Final Rules Should Be Clarified to Address When Landfills Are Permitted to Use Tier 4 39

c. The Final Rules Should Be Clarified to Address the Timing of GCCS Installation and Operation for Sources Using Tier 4 40

17cv01906 Sierra Club v. EPA ED_001523_00005679-00006

d. The Final Rules Should Clarify the Process for Submitting Annual Tier 4 Surface Emission Report 41
e. Tier 4 Recordkeeping Requirements Should Be Reduced 42
f. EPA Failed to Consider the Costs Associated With Tier 4 43
B. Liquids Addition Reporting 44
1. Annual Reporting Requirement is Unduly Burdensome 45
2. The Final Rules Should Not Include a Reporting Obligation That is Unrelated to Any Compliance Obligation 47
C. Corrective Action Timeline Procedures 49
V. Petition for Administrative Stay of the Final Rules Pending Judicial Review 52
Appendix A

I. Introduction

On August 29, 2016, the Environmental Protection Agency ("EPA" or "Agency") promulgated final rules entitled, *Standards of Performance for Municipal Solid Waste Landfills*, 81 Fed. Reg. 59332-59384 (Aug. 29, 2016) ("Subpart XXX"), and *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills*, 81 Fed. Reg. 59276-59330 (Aug. 29, 2016) ("Subpart Cf") (collectively referred to as the "Final Rules"). Prior to publication of the Final Rules, EPA issued the following notices of proposed rulemaking: *Standards of Performance for Municipal Solid Waste Landfills*, 79 Fed. Reg. 41795-41843 (July 17, 2014) and *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills; Advanced Notice of Proposed Rulemaking*, 79 Fed. Reg. 41771-41793 (July 17, 2014) (collectively referred to as "2014 Proposal"). A year later, EPA issued supplemental proposals, entitled *Standards of Performance for Municipal Solid Waste Landfills*, 80 Fed. Reg. 52162-52168 (Aug. 27, 2015) and *Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills; Proposed Rule*, 80 Fed. Reg. 52100-52162 (Aug. 27, 2016) (collectively referred to as "2015 Supplemental Proposal"). The Final Rules are intended to update existing rules regulating municipal solid waste ("MSW") landfills – the Standards of Performance for Municipal Solid Waste Landfills at 40 C.F.R. Part 60, Subpart WWW ("Subpart WWW") and the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills at 40 C.F.R. Part 60, Subpart Cc ("Subpart Cc").

Pursuant to Section 553(e) of the Administrative Procedure Act ("APA"), 5 U.S.C. § 553(e), the National Waste & Recycling Association, the Solid Waste Association of North America, Republic Services, Inc., Waste Management, Inc., and Waste Management Disposal Services of Pennsylvania, Inc. (collectively referred to as "Petitioners") request that EPA

17cv01906 Sierra Club v. EPA ED_001523_00005679-00008

immediately undertake a rulemaking to revise the Final Rules, as further specified in Section III, below. Additionally, pursuant to Section 307(d)(7)(B) of the Clean Air Act, 42 U.S.C. § 7607(d)(7)(B) ("CAA" or "Act"), Petitioners request that EPA reconsider certain aspects of the Final Rules, as set forth in Section IV, below. Finally, Petitioners request that EPA immediately grant Petitioners' request for administrative stay of the Final Rules, as more fully detailed in Section V, below, in order to suspend the effectiveness of the Final Rules and to allow the Agency time to correct the significant substantive and procedural flaws identified in this Petition.

II. Petitioners' Background

The National Waste & Recycling Association ("NWRA") is a trade association that represents private-sector waste and recycling companies in the United States, and manufacturers and service providers who do business with those companies. NWRA's members operate in all 50 states and the District of Columbia. NWRA provides leadership, education, research, advocacy, and safety expertise to promote North American waste and recycling industries, serve as their voice, and create a climate where members prosper and provide safe, economically sustainable, and environmentally sound services.

The Solid Waste Association of North America ("SWANA") is a California nonprofit public benefit corporation. Its membership includes more than 8,500 public and private sector professionals committed to advancing from solid waste management to resource management through their shared emphasis on education, advocacy and research. For more than 50 years, SWANA has been the leading professional association in the solid waste management field.

Republic Services, Inc.[1] ("Republic") serves residential, municipal, commercial, and industrial customers nationwide and is dedicated to providing dependable solutions for recycling and waste challenges. Republic provides reliable service through 340 collection operations, 201 transfer stations, 193 active landfills, 67 recycling centers, eight treatment, recovery and disposal facilities, 12 salt water disposal wells, and 69 landfill gas and renewable energy projects across 41 states and Puerto Rico. Republic maintains approximately 125 closed MSW landfills. Republic is a holding company and all operations are conducted by its subsidiaries.

Waste Management, Inc.[2] ("WM") is North America's leading provider of integrated waste management and environmental solutions. Through its network of subsidiaries, including Waste Management Disposal Services of Pennsylvania, Inc., WM operates 244 active, solid waste landfills, and at 136 of them, operates beneficial landfill-gas-to energy ("LFGTE") projects. These projects produce renewable electricity, renewable fuel for stationary facilities, and renewable transportation fuel for vehicles, including about 1000 of WM's own refuse collection trucks. WM maintains approximately 200 closed MSW landfills.

Petitioners have engaged with EPA during the rulemaking period and submitted comments on both the 2014 Proposal and 2015 Supplemental Proposal. *See* NWRA & SWANA, Comments on 2014 Proposal, Docket ID EPA-HQ-OAR-2003-0215-0108 & EPA-HQ-OAR-2014-0451-0062 ("NWRA & SWANA 2014 Comments"); NWRA & SWANA, Comments on 2015 Supplemental Proposal, Docket ID EPA-HQ-OAR-2003-0215-0196 & EPA-HQ-OAR-2014-0451-0186 ("NWRA & SWANA 2015 Comments"); Republic Services, Comments on

[1] Republic Services, Inc. is a holding company and all operations are conducted by its wholly-owned and majority-owned subsidiaries. This Petition is being filed by Republic Services, Inc. on behalf of these consolidated subsidiaries (collectively "Republic").

[2] Waste Management, Inc., a Delaware Corporation, is a holding company and all operations are conducted by its wholly-owned and majority-owned subsidiaries. This Petition is being filed by Waste Management, Inc. on behalf of these consolidated subsidiaries (collectively "Waste Management" or "WM").

17cv01906 Sierra Club v. EPA ED_001523_00005679-00010

Proposed Standards of Performance for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2003-0215-0099 ("Republic 2014 NSPS Comments"); Republic Services, Comments on Supplemental Proposal – Standards of Performance for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2003-0215-0202 ("Republic 2015 NSPS Comments"); Republic Services, Comments on the Advanced Notice of Proposed Ruling Making for Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2014-0451-0061 ("Republic 2014 EG Comments"); Republic Services, Comments on Proposed Rules; Emission Guidelines, Compliance Times, and Standards of Performance for Municipal Solid Waste Landfills, Docket ID EPA-HQ-OAR-2014-0451-0176 ("Republic 2015 EG Comments"); Waste Management, Inc., Comments on 2014 Proposal, Docket ID EPA-HQ-OAR-2003-0215-0100 & ("WM 2014 Comments"); Waste Management, Inc., Comments on 2015 Supplemental Proposal, Docket ID EPA-HQ-OAR-2003-0215-0198 & EPA-HQ-OAR-2014-0451-0192 ("WM 2015 Comments"). Additionally, WM, Republic, and other industry stakeholders have provided supplemental information relating to implementation of Subparts WWW and Cc, which can be found in the docket for Subpart XXX at the following Docket ID numbers: EPA-HQ-OAR-2003-0215-0003, EPA-HQ-OAR-2003-0215-0007, EPA-HQ-OAR-2003-0215-0053, EPA-HQ-OAR-2003-0215-0055, EPA-HQ-OAR-2003-0215-0057, EPA-HQ-OAR-2003-0215-0058.

III. Petition for Rulemaking

Petitioners ask EPA to initiate rulemaking to address certain aspects of EPA's Final Rules that were raised in comments at proposal. Under Section 553(e) of the APA, any party can ask any agency to issue, amend, or repeal a rule. 5 U.S.C. § 553(e). Although Section 307(d) of the CAA states that Section 553 of the APA shall not apply to the promulgation or revision of

most nationally-applicable CAA rules, including NSPS or EG rules,[3] the federal courts continue to recognize the right of the public to petition EPA for rulemaking under the CAA. [4]

The Petitioners recognize that the federal courts' authority to review EPA decisions on whether to grant or deny petitions for rulemaking is "extremely limited and highly deferential." *See WildEarth Guardians v. EPA*, 751 F.3d 649 (D.C. Cir. 2014) (denying a challenge to EPA's decision to deny a petition for rulemaking under Section 111 on the basis of ongoing budget uncertainties and limited resources). Nevertheless, Petitioners believe that the Final Rules are fundamentally flawed, are inconsistent with the structure and purpose of Section 111 of the CAA, and therefore warrant revision. Accordingly, Petitioners submit this petition for rulemaking in the hope that EPA will recognize that numerous flaws remain unaddressed, despite timely comments raising those concerns, and initiate a rulemaking process to address them. Since Petitioners believe that the issues for which rulemaking is requested below can be more fully vetted through an official notice and comment rulemaking process, the issues are described here only in general terms. Petitioners look forward to providing greater detail and proposed solutions for the concerns identified below during the rulemaking process. Nevertheless, because Petitioners did comment on the issues identified in this Section III during the rulemaking process for the Final Rule, such issues are also ripe for judicial review. 42 U.S.C. § 307(d).

A. Overlapping Applicability of Old and New Subparts

In promulgating the Final Rules, the Agency has created an unintelligible web of standards that apply to MSW landfills in contravention of Section 111, consisting of: (1) old

[3] 42 U.S.C. § 307(d).

[4] *Massachusetts v. EPA*, 415 F.3d 50, 53 (D.C. Cir. 2005) (noting that Section 307 authorizes judicial review of EPA's decision to deny a petition for rulemaking), *rev'd and remanded on other grounds by* 549 U.S. 497, 527 (2007) (referring to the filing of a petition for rulemaking under the CAA as "procedural right" and confirming that the denial of such a petition may be addressed via judicial review under Section 307). *Accord Friends of the Earth v. EPA*, 934 F. Supp.2d 40, 54 (D.D.C. 2013) ("EPA is required to respond to a citizen petition for rulemaking.") (citing *Massachusetts v. EPA*).

17cv01906 Sierra Club v. EPA ED_001523_00005679-00012

Subparts WWW and Cc, which have not been expressly superseded; (2) 40 C.F.R. Part 63, Subpart AAAA ("the Landfill NESHAP" or "Subpart AAAA"), which continues to rely on Subparts WWW and Cc for its substantive compliance obligations; and (3) new Subparts XXX and Cf, which were intended to update the standards for landfills but were adopted as free-standing and separate subparts.

Despite many comments asking EPA to address the potential overlap among its old rules, the new rules, and the Landfill NESHAP (which requires compliance with Subparts WWW and Cc), EPA did not address that critical concern. For example, WM's comments expressly asked "how EPA's proposal to correct and clarify the regulatory language based on Subpart WWW would affect Subpart WWW itself, and importantly, compliance obligations for existing facilities." WM 2014 Comments at 3-4. Republic similarly commented that "EPA must also address the compliance obligations that may result for sites that must transition from Subpart WWW to Subpart XXX following a modification." Republic 2015 EG Comments at 33. Both companies also commented that the decision to adopt entirely separate subparts for the revised rules (Subparts XXX and Cf) ignores the fact that the Landfill NESHAP continues to require compliance with the old subparts (Subparts WWW and Cc). WM 2015 Comments at 70; Republic 2015 EG Comments at 33.

Despite these comments, EPA adopted applicability provisions in its new subparts that fail to take into account the applicability provisions of the old subparts and the Landfill NESHAP, which EPA did not revise. EPA acknowledges that the Agency could have accomplished the updates to Subparts WWW and Cc merely by updating those old subparts. *See* 81 Fed. Reg. at 59333, FN 3. Such a decision would have avoided the confusion that has resulted. Nevertheless, the Agency decided instead to forge a more complicated path by

updating Subparts WWW and Cc via promulgation of two new and separate subparts. As a result, the applicability provisions for all five rules—the old and new NSPS and EG and the Landfill NESHAP—are now codified as follows:

- Subpart Cc: landfills constructed / modified "before May 30, 1991"[5]
- Subpart WWW: landfills constructed / modified "on or after May 30, 1991"[6]
- Subpart Cf: landfills constructed / modified "on or before July 17, 2014"[7]
- Subpart XXX: landfills constructed / modified "after July 17, 2014"[8]
- Subpart AAAA: requiring landfills that are major sources or area sources meeting certain design capacity thresholds to comply with WWW or Cc[9]

Because of the overlapping applicability provisions, a landfill will necessarily meet the applicability criteria of more than one subpart, as illustrated in the table provided below:

Landfills that were last constructed / modified ...	Emission Guidelines		NSPS	
	Cc (old)	Cf (new)	WWW (old)	XXX (new)
... before May 30, 1991	×	×		
... on or between May 30, 1991 & July 17, 2014		×	×	
... after July 17, 2014			×	×

This overlapping applicability is unreasonable because on their face the rules would require landfills to simultaneously comply with different and overlapping provisions from either the new or old subparts, forcing Petitioners to engage in two different sets of activities to ensure compliance with the new and old rules. In doing so, EPA is forcing landfills to meet all provisions of the Final Rules without allowing landfills to benefit from the regulatory provisions that EPA intended to update and streamline, since the old rules will still apply. As just one

[5] 40 C.F.R. § 60.32c.

[6] 40 C.F.R. § 60.750.

[7] 40 C.F.R. § 60.31f.

[8] 40 C.F.R. § 60.760.

[9] 40 C.F.R. §§ 63.1935; 63.1955.

example, EPA eliminated the wellhead oxygen parameter as a basis for requiring corrective action in Subparts XXX and Cf, but Subparts WWW and Cc—one of which will still apply to all landfills—will continue to require all landfills to take corrective action for oxygen exceedances.

The overlapping applicability provisions contravene the CAA because they have the effect of simultaneously regulating some landfills as both "new" landfills subject to a NSPS and "existing" landfills subject to an EG. That result is prohibited by the CAA, which defines the two terms "new source" and "existing source" in mutually exclusive fashion and establishes separate programs for "new" and "existing" sources—Section 111(b) for new sources, and Section 111(d) for existing sources. Given that the definition of "existing source" is "any stationary source *other than* a new source," a single source cannot be regulated simultaneously as both a "new source" under a Section 111(b) NSPS and an "existing source" under a Section 111(d) EG. 42 U.S.C. § 7411(a)(6). But that is exactly the result of EPA's failure to properly address the overlapping applicability of its old and new NSPS and EG for some landfills, as illustrated above.

Likewise, EPA failed to address the fact that the Landfill NESHAP still requires compliance with the substantive obligations of Subparts WWW and Cc. Despite many comments identifying the inconsistency between the proposed rules and the Landfill NESHAP, EPA completely failed to address these comments in the Final Rules.

EPA's own statements confirm that the Agency did not intend for landfills to comply with both the old and new rules simultaneously. The most obvious indication of EPA's intent with the Final Rules is EPA's description of them as a "revision," "update," or "changes" to the old rules. *See e.g.*, 81 Fed. Reg. at 59276 ("Based on this review, the EPA has determined that it is appropriate to revise the Emission Guidelines . . ."). Even more explicitly, the preambles

explain that EPA believes "the most appropriate way to proceed is to establish a new subpart that includes both the verbatim restatement of *certain provisions* in the existing Emission Guidelines and revisions to, or the addition of, *other provisions*." *Id.* at 59286. This statement confirms that EPA did not intend for all provisions of Subpart WWW and Cc to continue to apply as currently written, but EPA's Final Rules do not reflect that intent. EPA even justified its decision to revise Subparts WWW & Cc by quoting Supreme Court precedent holding that "[r]egulatory agencies do not establish rules of conduct to last forever," even though EPA has failed in this instance to adopt any language to terminate the effectiveness of such standards. *Id.* at 59277 (citing *Am. Trucking Ass'n v. Atchison, Topeka & Santa Fe Ry.*, 387 U.S. 397, 416 (1967)).

EPA's failure to enact appropriate applicability provisions in its Final Rules renders them unlike any other NSPS revision that EPA has ever adopted. All of the other NSPS revisions that EPA has adopted make clear that only one NSPS subpart should apply at a time (and EPA has never before revised an EG). For example, when EPA adopted a new standard for stationary combustion turbines in Subpart KKKK, EPA confirmed that sources subject to the new Subpart KKKK provisions would be "exempt" from the provisions of Subpart GG. 40 C.F.R. § 60.4305 ("Stationary combustion turbines regulated under this subpart [KKKK] are exempt from the requirements of subpart GG of this part."). Similarly, after EPA adopted a new standard in Subpart Da for fossil fuel-fired steam generators, EPA revised the old Subpart D to make clear that any facility subject to the new standard "is not subject" to the old standard. 40 C.F.R. § 60.40 ("Any facility subject to . . . subpart Da . . . of this part is not subject to this subpart."). Many other subparts contain language of similar effect to avoid the overlap of old and newly revised standards. *See, e.g.*, 40 C.F.R. Part 60, Subparts Ea, Eb, K, Ka, Kb, AA, AAa, J, Ja, VV,

VVa, GGG, GGGa, AAAA, BBBB, CCCC, DDDD, EEEE, FFFF. The only instance of EPA adopting a new subpart without expressly addressing the applicability of an old subpart that Petitioners were able to identify is Subpart TTTT, in which EPA adopted standards for electric generating units, but in that case no overlap occurred because Subpart TTTT only regulates an entirely new pollutant—greenhouse gas emissions—that was not covered by the preexisting standards.

EPA's error in failing to address the overlapping applicability of the Final Rules, Subparts WWW and Cc, and the Landfill NESHAP requires an additional rulemaking action. Only through further revisions to its regulations can EPA make sufficiently clear that only the newly "revised" and "updated" versions of the regulations apply, as EPA originally intended. In the case of the Landfill NESHAP, EPA must acknowledge that compliance with the Final Rules satisfies the sections of Subpart AAAA that currently reference Subparts WWW and Cc. When EPA promulgated the Landfill NESHAP, the Agency concluded that substantive provisions of Subparts WWW and Cc were the appropriate basis for the rule's MACT standard. Having now updated Subparts WWW and Cc via promulgation of the Final Rules, the Agency must carry through such updates to the Landfill NESHAP.

Certainly, if a State adopts a Section 111(d) plan for implementing the EG that confirms compliance with the new EG satisfies the old EG, and EPA approves that plan, the State may be able to resolve this overlapping applicability concern for landfills subject only to the old and new EG (i.e., those constructed and last modified prior to May 30, 1991). However, Section 111(b) does not authorize States to revise the applicability provisions of the standards that EPA has adopted for new sources. Therefore, States will not have the authority to resolve the

applicability concerns for any landfill subject to Subpart WWW, XXX, or both (i.e., those constructed and last modified on or after May 30, 1991).

When EPA initiates a rulemaking process to resolve the overlapping applicability of Subparts XXX, WWW, Cf, and Cc, and the Landfill NESHAP, EPA must also address the process by which a landfill transitions from the old rules to the new. Again, despite numerous comments requesting that EPA address the procedures and timing for transitioning to the compliance obligations of the Final Rules, EPA simply failed to respond. *See* WM 2014 Comments at 3-4; Republic 2015 EG Comments at 33. As a result, states and regulated entities are left without any direction on how to implement the new rules once they take effect. Landfills will need some time to make the changes that the Final Rules require, so a transition policy should allow a reasonable amount of time for achieving compliance.

Thus, Petitioners respectfully ask EPA to convene a notice-and-comment rulemaking action to address this overlapping applicability concern through rule revisions, accompanied by provisions that allow a reasonable time period for compliance with the new requirements.

B. Design Plan and Alternatives Approval Process

The Final Rules contain numerous and conflicting provisions addressing the need for submittal and approval of landfill gas collection and control system ("GCCS") design plans, the obligation to operate in accordance with an approved design plan, and the potential enforcement risk for facilities that have not yet received approval of their design plan. Petitioners request that the Agency initiate a rulemaking intended to provide greater clarity for compliance obligations related to the design plan approval process.

Under Subparts WWW and Cc, Petitioners have experienced a very low rate of agency review and approval of design plans, including alternatives to the design standards and operating parameters, leaving many facilities without any certainty as to whether the design plan

requirements have been met or whether their alternatives are appropriate. At proposal, EPA solicited comments on streamlining the design plan approval process. Petitioners urged EPA to clarify and streamline these requirements, recommending that the Agency (1) establish a defined timeline for review and approval or denial of design plan submittals; and (2) establish a process for automatic approval should the Administrator or delegated authority fail to respond within the established deadline. As an alternative, Petitioners urged EPA to reexamine the need for an affirmative approval of design plans in general, noting that many EPA rules do not require approval of similar types of conceptual plans. See WM 2014 Comments at 30-35. In supplemental comments submitted to EPA, Petitioners provided numerous examples of EPA rules that do not require agency approval of analogous plans. A copy of Petitioners' Supplemental Comments[10] is attached hereto at Appendix "A". (Note that these comments were provided at EPA's request.) In the Final Rules, EPA did not address Petitioners' comments and instead worsened the compliance uncertainty associated with GCCS design plan review and approval. Thus, Petitioners request that the Agency initiate a rulemaking, respond to Petitioners' comments, and provide greater clarity around compliance obligations related to the design plan approval process.

1. The Final Rules Do Not Ensure Agency Review or Approval of Design Plans

In the Final Rules, EPA definitively stated that agency approval of GCCS design plans is required. See 40 C.F.R. § 60.762(b)(2)(i) and 40 C.F.R. § 60.767(c)(4). Yet, having established in the Final Rules that design plans must be submitted for approval, EPA's approval process fails to ensure that the Agency will ever review submitted design plans, let alone approve them.

[10] Petitioners note that EPA has failed to include the Supplemental Comments in Appendix A in the dockets for the Final Rules, despite requesting that Petitioners submit them. Petitioners have attached the Supplemental Comments to this Petition for the Agency's ease of review.

Specifically, section 60.767(c)(5) requires "[t]he landfill owner/operator to notify the Administrator that the design plan is completed and submit a copy of the plan's signature page. The Administrator has 90 days to decide whether the actual design plan should be submitted for review. If the Administrator chooses to review the plan, the approval process continues as described in (c)(6) of this section." The section thus leaves entirely to the discretion of EPA or delegated authority whether to review any submitted design plan. Section 60.767(c)(6) creates even more confusion as it consists of two contradictory sentences. The first requires that the Administrator, upon receipt of an initial or revised design plan, "*[m]ust* review information submitted . . . and either approve it, disapprove it, or request additional information." But the second sentence then imposes an unacceptable enforcement risk on the landfill owner/operator in the event that "the Administrator indicates that submission is not required, or does not respond within 90 days," by stating that "the landfill owner/operator *can* continue to implement the plan with the recognition that the owner/operator is proceeding at their own risk." The same paradoxical provisions are reflected in Subpart Cf in Section 60.38f(d)(5) and (6).

Notwithstanding use of the word "must" in these provisions, the overall process described in (c)(5) and (6) indicates that the Agency may choose whether or not to review the design plan. This is completely at odds with the Agency's unambiguous statements in the Final Rules requiring design plan approval. The EPA has thus created a system by which the landfill owner/operator is required to submit a design plan for agency approval, but neither EPA nor its state or local counterparts are held accountable for actually reviewing and approving or disapproving those plans. In fact, the process outlined in the Final Rules does not even require the regulatory agencies to acknowledge receipt of the plans.

2. The Final Rules Provide no Clarity on Whether Landfills Must Proceed with GCCS Installation in the Absence of Agency Approval

The Final Rules state that if the Administrator does not approve or disapprove the design plan, or request additional information within 90 days of receipt, then the owner or operator *"can"* continue with implementation of the design plan, recognizing that they would "be proceeding at their own risk." 40 C.F.R. § 60.767(c)(6); 40 C.F.R. § 60.38f(d)(5) and (6). The language is permissive, failing to inform the regulated entity what it should or must do when the regulator fails to review and approve their plan, or to provide a path forward for obtaining plan approval should the agency be non-responsive. 40 C.F.R. § 60.767(c)(5) & § 60.38f(d)(5).

This permissive language conflicts with other provisions of the Final Rules requiring actions to be taken in conformance with an approved plan. For example, the compliance provisions in the Final Rules at Sections 60.765(b) and 60.36f(b) state that the landfill owner/operator "must place each well or design component as specified in the *approved* design plan as provided in § 60.767(c) (emphasis added)." Additionally, monitoring provisions at Sections 60.766(d) and 60.37f(d) require that a landfill owner/operator complying with the GCCS operational standards by using a device other than a non-enclosed flare, an enclosed combustor, or treatment system *must* provide information satisfactory to the Administrator, and that the Administrator must review and approve it or request additional information. Likewise, where the landfill owner/operator seeks to employ alternatives to the operational standards, test methods, compliance provisions or other aspects of the Final Rules, the landfill owner/operator *must* submit those alternatives to the Agency in the design plan. 40 C.F.R. § 60.767(c)(2) and § 60.38f(d)(2). Thus, even though key implementation requirements are contingent on design plan approval, the Final Rules do not suspend a landfill's compliance obligations pending that

approval, leaving the landfill with little choice but to take the risk that EPA has identified in its rule language.

These contradictory requirements are paralyzing for affected facilities that have prepared and submitted GCCS design plans in good faith. In light of the requirements in the Final Rules at Sections 60.762(b)(2)(ii) and 60.33f to seek permits, award contracts, install and start up a GCCS within 30 months of the regulatory trigger event, a landfill owner or operator is placed into an untenable situation: either face potential enforcement risk for missing the 30-month compliance deadline, or face potential financial *and* enforcement risk for installing and operating a multi-million-dollar gas collection system in accordance with a design plan that is later disapproved.

3. EPA's Design Plan Approval Process Subjects Affected Facilities to Unclear Compliance Obligations and Untenable Financial and Enforcement Risk

The Final Rules' design plan approval process creates a circumstance in which affected facilities are subject to risk of enforcement regardless of which course of action they take and through no fault or failure of their own. Indeed, the Final Rules conclude the confusing design plan approval process with the following statement:

> In the event that the design plan is required to be modified to obtain approval, the owner or operator must take any steps necessary to conform any prior actions to the approved design plan and any failure to do so could result in an enforcement action.

40 C.F.R. § 60.767(c)(5) and 40 C.F.R § 38f(d)(5).

This language is unintelligible, and notably, was not included in any of EPA's rulemaking proposals. As an initial matter, EPA does not explain how one can achieve the feat of conforming prior actions to a newly imposed requirement. Second, EPA does not explain whether the resulting enforcement risk is retroactive, prospective, or both. Certainly, the threat

of retroactive enforcement for good-faith actions taken pursuant to a design plan that an agency declined to review contravenes basic principles of fairness and due process. Finally, EPA failed to even acknowledge the significant financial risk associated with installing a multi-million dollar system that may later (maybe years later) be determined insufficient. This risk is particularly relevant for landfills that propose site-specific alternatives. Indeed, the Final Rules readily acknowledge that:

> Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems or horizontal trenches only, leachate components, and passive systems.

40 C.F.R. § 60.767(c)(6) and 40 C.F.R. § 60.38f(c)(6). Thus, although EPA clearly acknowledges the need for alternative designs, and that the landfill owner/operator is required to obtain Agency approval for those designs, EPA makes no commitment to review those alternatives. EPA's response on this issue is insufficient. EPA states:

> Because the initial design can significantly affect the long-term operation of the landfill GCCS, and that design is site-specific, the EPA has retained the design plan approval process to provide flexibility to the sites on designing an appropriate system, while also providing a level of regulatory oversight *before the system is installed* in order to minimize scenarios where an improperly designed system is constructed and installed.

EPA, Responses to Public Comments on EPA's Standards of Performance for Municipal Solid Waste Landfills and Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills: Proposed Rules, 965 (hereinafter "Response to Comments Document") (emphasis added). Far from minimizing these risks for regulated entities, EPA's design plan approval process creates enforcement risk where none should exist and expressly does not ensure any level of regulatory oversight before the GCCS is installed. Because the GCCS requirement is the

centerpiece of the Final Rules, ambiguity and conflicting provisions concerning GCCS design plan approval cause the Final Rules to lack the most fundamental element of a properly functioning regulatory system, which is to provide fair and timely notice of the compliance obligations to which a regulated entity is subject, in this case via approval of required regulatory documents. *See generally, United States v. Trident Seafoods*, 60 F.3d 556 (9th Cir. 1995); *Gates & Fox Co. v. OSHRC*, 790 F.3d 154 (D.C. Cir. 1986); *General Electric v. U.S. EPA*, 53 F.3d 1324 (D.C. Cir. 1995). If GCCS design plan approval is a required component of a rule, then agency review and approval or denial must also be a rule requirement, so that a regulated entity can move forward with implementation, confident that it has been apprised of its compliance obligations. The Final Rules fail to provide this essential regulatory element.

4. EPA Must Correct the Rules to Require Affirmative Agency Approval in a Timely Manner

Petitioners have observed a demonstrated failure by agencies to review, approve, or even acknowledge design plan submittals under the existing Subparts WWW and Cc. WM and Republic estimate that only about 40% of their landfills operate pursuant to an approved design plan due to lack of timely action by EPA and state authorities. Accordingly, Petitioners urge EPA to initiate a rulemaking to address this problem under the Final Rules. In that context, we again ask EPA to eliminate the need for agency review and approval of GCCS plans, which is a system that has simply not worked to date. Instead, Petitioners recommend that delegated authorities should be allowed to rely upon a licensed, third-party professional engineer ("PE") certification of design plans and revisions in lieu of an agency review and approval process. Petitioners recommend that certified plans be maintained onsite for inspection and/or submittal to the implementing agency. This approach is consistent with sixty-two other Clean Air Act rulemakings identified in Petitioners' Supplemental Comments attached at Appendix A.

17cv01906 Sierra Club v. EPA ED_001523_00005679-00024

Reliance on a certification by a licensed, third-party PE in lieu of agency approval would also be consistent with the approach EPA finalized in the Agency's recent NSPS rulemaking impacting the Oil & Natural Gas Sector. *See* EPA, *Oil & Natural Gas Sector: Emission Standards for New Reconstructed, and Modified Sources*; *Final Rule*, 81 Fed. Reg. 35824, 35942, 35848 (June 3, 2016) (finalizing standards allowing for PE certification of closed vent system design and technical infeasibility to connect a pneumatic pump to existing control device). In the event that EPA continues to believe that design plan review and approval is necessary, we ask the Agency to consider a defined timeframe for such review and a deemed approval in the event that the reviewing agency fails to respond in a timely manner.

C. Non-Producing Areas

Petitioners request that the Agency initiate a rulemaking proceeding to provide compliance flexibility in landfill areas with declining gas flows. Such flexibility is critically important to landfills required to implement the more stringent 34 Mg/year non-methane organic compound ("NMOC") emission threshold. In the Final Rules, EPA failed to address three critical issues: (1) the Final Rules do not allow for the capping, removal, or decommissioning of portions of a GCCS in non-producing areas; (2) the term "closed area" is too narrowly defined, which in turn limits the utility of the 1% NMOC exclusion; and (3) the Final Rules do not allow the use of surface emission monitoring ("SEM") to demonstrate that capping, removal, or decommissioning of a GCCS is appropriate based on-site specific surface methane concentrations.

1. The Final Rules Should Allow for the Capping, Removing, and Decommissioning of GCCS From Non-Producing Areas of Active and Closed Landfills

In the Final Rules, EPA restricts capping, removing, or decommissioning of a GCCS to entire closed landfills and does not allow for capping, removing, or decommissioning[11] of portions of a GCCS in closed or non-producing *areas* of otherwise active landfills or closed landfills. *See* 40 C.F.R. § 60.762(b)(2)(v); 40 C.F.R. § 60.33f(f). In other words, EPA does not allow for partial removal or decommissioning of a GCCS at any landfill, closed or open. At proposal, EPA acknowledged and requested comment on how non-producing areas of the landfill (*i.e.*, areas that are no longer generating landfill gas), could be excluded from gas collection and control requirements and whether the criteria for capping or removing a GCCS in Subparts WWW or Cc are appropriate. *See* 79 Fed. Reg. at 41783 & 41792. In the 2015 Supplemental Proposal, EPA proposed criteria for capping and removing a GCCS from the entire closed landfill, or portions of an active landfill.

In the Final Rules, however, EPA only allows for removal of a GCCS from entire closed landfills, *and not non-producing areas*. In the preamble to the Final Rules, EPA states that the Agency intended to provide flexibility to landfills with declining gas production by allowing landfills to demonstrate that a GCCS cannot operate for 15 years and should be removed. *See* 81 Fed. Reg. at 59357-58 & 81 Fed. Reg. at 59302 ("EPA is retaining the requirement to operate the GCCS for 15 years, but is providing flexibility to address declining gas flows in areas where the GCCS has not operated for 15 years."). Petitioners appreciate the inclusion of this option, but note that EPA has completely failed to achieve its goal of providing flexibility to *areas* with

[11] Petitioners note that we have repeatedly requested that EPA define the term "decommission" as used in the Final Rules, but EPA has refused to do so. We again request that the Agency provide a definition for "decommission" that provides a stepdown procedure or options for suspending operation of individual collectors or portions of the GCCS system in areas with declining gas flows.

declining flows by finalizing removal criteria that only allow for GCCS removal or decommissioning in entire closed landfills.

By excluding from the Final Rules an option for decommissioning or removing a portion of a GCCS in non-producing areas, EPA has ignored Petitioners' and others' repeated concerns about declining gas production. *See e.g.*, WM 2014 Comments at 17-19; WM 2015 comments at 12-13; Small Business Advocacy Review Panel, Final Report on EPA's Planned Proposed Rules Standards of Performance for Municipal Solid Waste Landfills and Review of Emissions Guidelines for Municipal Solid Waste Landfills (July 21, 2015) (hereinafter "SBARP Final Report"). EPA has not explained why the Agency has arbitrarily limited GCCS decommissioning or removal to entire closed landfills, other than to note that such change was based on the Agency's consideration of public comments. However, Petitioners have not identified any comments in the rulemaking docket that question EPA's proposed approach to allow for removal or decommissioning of portions of a GCCS in nonproducing areas.

Without such flexibility, landfills with areas of declining gas production will face significant hardships associated with the maintenance of a GCCS in those areas, including an inability to comply with wellhead parameters in the Final Rules, risk of pulling ambient air into the GCCS and damaging the system, and significant use of fossil fuels to maintain flare operation, none of which provide any emission reduction or other environmental benefit. Petitioners request that EPA initiate a notice and comment rulemaking to allow for removal or decommissioning of GCCS in nonproducing areas of landfills, whether closed or active.

2. EPA's Definition of "Closed Area" Is Needlessly Narrow

The Final Rules allow the landfill owner/operator to use actual gas flow measurements to demonstrate that "closed areas" may be excluded from GCCS coverage because they contribute less than 1% of a landfill's total NMOC emissions. However, EPA's definition of "closed area"

in the Final Rules is unnecessarily restrictive as it includes only areas that are physically separated from active portions of a landfill: Under the Final Rules, EPA has defined "closed area" to mean a:

> separately lined area of an MSW landfill in which solid waste is no longer being placed. If additional solid waste is placed in that area of the landfill, that landfill area is no longer closed. The area must be separately lined to ensure that the landfill gas does not migrate between open and closed areas.

40 C.F.R. § 60.761; 40 C.F.R. § 60.41f. Therefore, under the Final Rules, separately lined areas may be excluded from control upon a showing of less than 1% of NMOC contribution using actual flow rates. *See* 40 C.F.R. § 60.769(a)(3)(ii)(B).

EPA's decision to define "closed area" so narrowly fails to provide landfills with declining gas flow much needed flexibility, particularly in light of the stringent 34 Mg/year NMOC emission threshold in the Final Rules, and is based on the mistaken premise that physical separation is needed to prevent gas migration from closed areas. In response to the 2015 Supplemental Proposal, Petitioners urged EPA to expand its definition of "closed area" to include areas with low gas flow, even if such areas are not physically separated from active areas by means of a physical barrier. Petitioners stated that EPA's concern about gas migration from an unclosed area with a GCCS to a closed area without a GCCS was unfounded because landfill gas travels from areas of high pressure to areas of low pressure. *See e.g.* Republic 2015 EG Comments at 29 ("EPA's concern that gas could migrate from an unclosed area (with GCCS) to a closed area (without GCCS) is unfounded because landfill gas travels from areas of high pressure to areas of low pressure, not the other way around.").

In justifying its decision not to expand the definition of "closed area" in the Final Rules, EPA relies on the same unsupported assertion from the 2015 Supplemental Proposal, stating in the Response to Comments Document that:

> the EPA has retained the requirement that closed areas of open landfills must be physically separated (e.g., separately lined) . . . because [EPA] continue[s] to believe that landfill gas can migrate between areas of the landfill. As described in the [2014 Proposal], measurements might not accurately reflect actual emissions from the given landfill area because gas could be moving underground and escaping or being collected from an adjacent section of the landfill.

Response to Comments Document at 223. EPA further states that Petitioners failed to provide additional data that gas migration will not occur. *See id.* But additional data is unnecessary to confirm the laws of physics, which unquestionably dictate that gas would instead migrate from the closed area toward the open area with the GCCS, to the extent that it would move at all. EPA has not offered any data to support its unfounded assertion that gas migration will occur.

Petitioners request that EPA undertake a notice and comment rulemaking to correct the definition of "closed area" in the Final Rules to eliminate physical separation as a necessary criterion. A revised definition of "closed area" would allow nonproducing areas to take advantage of actual flow data to demonstrate that such areas contribute less than 1% of the landfill's NMOC emissions. This same definition of "closed area" should be used by EPA when revising the GCCS removal criteria to allow for removal or decommissioning of portions of a GCCS from nonproducing areas, as discussed above.

3. The Final Rules Should Allow for Surface Emission Monitoring to Support Removal or Decommissioning of a GCCS

In the 2015 Supplemental Proposal, EPA proposed to allow owners/operators to use SEM for purposes of determining when a GCCS can be removed or partially removed. 80 Fed. Reg. at 52150. Nevertheless, under the Final Rules, the Agency has not included SEM as a basis to

demonstrate that site specific conditions warrant removal of GCCS or portions thereof. *See* 40 C.F.R. § 60.33f(1)(f) & 40 C.F.R. § 60.764(1)(f) (excluding SEM from GCCS removal criteria). The unavailability of SEM for GCCS removal significantly increases the burden of the Final Rules' more stringent 34 Mg/NMOC emission threshold and magnifies concerns for landfills with declining gas production. Without the option to use SEM to demonstrate that GCCS removal or decommissioning is appropriate, the 34 Mg/year NMOC emission threshold will further delay the point at which a landfill may remove controls, even when site-specific conditions would warrant removal.

EPA's decision to exclude the option of using SEM from the GCCS removal criteria in the Final Rules significantly and unnecessarily reduces the flexibility available to landfills with areas of declining gas flows and is contrary to the numerous comments submitted to EPA by diverse stakeholders. *See e.g.* WM 2015 Comments; National Association of Clean Air Agencies, Comments on 2015 Supplemental Proposal (Docket ID EPA-HQ-OAR-2003-0215-0197; EPA-HQ-OAR-2014-0451-0187) ("NACAA 2015 Comments").

The SEM criteria for GCCS removal or decommissioning presented in the 2015 Supplemental Proposal addressed key concerns raised by Petitioners for the past twelve years regarding a step-down for GCCS operations due to declining flow.[12] Many areas of landfills with declining flows struggle to maintain sufficient gas flow to operate their control systems, even under the 50 Mg/year threshold established under Subparts WWW and Cf. At the lower 34 Mg/year threshold, landfill owner/operators will need to use increasing amounts of fossil fuel to maintain flare operation, which *increases* emissions of GHG and other pollutants, a result clearly

[12] *See* Docket ID Numbers EPA-HQ-OAR-2014-0451-0037, EPA-HQ-OAR-2003-0215-100, EPA-HQ-OAR-2003-0215-017, EPA-HQ-OAR-2003-0215-0055, EPA-HQ-OAR-2003-0215-0057 and EPA-HQ-OAR-2003-0215-0058, EPA-HQ-OAR-2014-0451-0176; *see also* SWANA, Letter to JoLynn Collins, EPA Waste and Chemical Process Group (Docket ID EPA-HQ-OAR-2003-0215-003).

inconsistent with the purpose of the Final Rules. Therefore, Petitioners urge EPA to allow landfill owners and operators the option to use SEM to demonstrate that GCCS removal is appropriate.

EPA's only explanation for removing such necessary flexibility from the Final Rules is that several commenters objected to the use of SEM for GCCS removal demonstrations. *See* 81 Fed. Reg. at 59357. However, the Agency ignored the majority of comments that supported the use of SEM for GCCS removal demonstrations, including comments submitted by the National Association of Clean Air Agencies ("NACAA"), a national, non-partisan, association of air pollution control agencies in 40 states, the District of Columbia, four U.S. territories and 116 metropolitan areas with air quality professionals. *See generally* NACAA 2015 Comments. In fact, of the over 200 comments in the combined dockets for the Final Rules, less than a handful of commenters explicitly raised concerns with the use of SEM for determining when a GCCS or portions of it could be capped, removed or decommissioned.

EPA has not explained why the Agency relied on comments from so few entities to justify removing the SEM criterion and ignored supporting comments from numerous, diverse stakeholders with substantial experience implementing EPA's CAA Section 111 rules. Accordingly, Petitioners request that EPA initiate a rulemaking to revise the Final Rules to allow for SEM for purposes of demonstrating the appropriateness of GCCS removal and decommissioning, based on site-specific conditions.

D. EPA Should Adopt a Clear Definition of Cover Penetrations

In its 2014 Proposal, EPA sought to "clarify" that "all cover penetrations must be checked during quarterly surface monitoring." 79 Fed. Reg. at 41804. However, that proposal actually represented a significant change to current requirements, as noted by several commenters. *See e.g.* Republic 2015 EG Comments at 5-7; WM 2015 Comments at 25-27.

Whereas Subparts WWW and Cc only require monitoring "where visual observations indicate elevated concentrations of landfill gas, *such as* distressed vegetation and cracks or seeps in the cover," the Final Rules add to the end of that provision "*and all cover penetrations*." *Compare* 40 C.F.R. § 60.753(d) *with* 40 C.F.R. § 60.763(d). The Final Rules also state that an owner/operator "must monitor *any openings*." *Id.*

With the addition of the phrase "and all cover penetrations," EPA has shifted the focus away from "visual observations [of] elevated concentrations of landfill gas" (with cracks and seeps as just examples), to a different focus on cover penetrations, regardless of whether such penetrations exhibit any visible signs of landfill gas. Given that very few cover penetrations do exhibit visual signs of elevated concentrations, the effect of EPA's change forces landfill owners and operators to monitor "all cover penetrations" instead of only monitoring where visual observations suggest that monitoring is warranted. Thus, EPA has fundamentally altered the surface monitoring requirement. Far more than a mere "clarification" of existing requirements, EPA's "all cover penetrations" provision is entirely new and potentially burdensome, and commenters opposed it.

But perhaps the most disconcerting aspect of this new requirement is the lack of any clear definition of the "cover penetrations" that all landfills must now monitor. Although EPA's new provision certainly expands the monitoring requirement far beyond its previous scope, the lack of a definition of "cover penetration" leaves uncertain the full scope of this new requirement. Taken literally, the requirement to monitor "all cover penetrations" could be interpreted to require landfills to monitor every single stake in the ground, including every fence and sign post, of which most landfills have thousands. Furthermore, EPA's use of the term "any openings" is an ambiguous extra term that adds further confusion to EPA's intended meaning of "cover

17cv01906 Sierra Club v. EPA ED_001523_00005679-00032

penetrations." In addition to providing a definition of "cover penetrations," the Agency must remove the reference to "any openings" in the Final Rules to avoid creating undue confusion.

EPA has recognized that a completely literal interpretation of "cover penetrations" was not intended. Specifically, EPA noted in the preambles to the Final Rules that "[c]over penetrations include wellheads, but do not include items such as survey stakes, fencing or litter fencing, flags, signs, trees, and utility poles." 81 Fed. Reg. at 59288. EPA also confirmed more broadly in the Response to Comments Document that "cover penetrations" is only intended to include "component[s] of the GCCS system or leachate collection and control system that completely passes through the landfill cover into waste, such as wellheads, leachate risers, and manholes." Response to Comments Document at 745. This more limited definition of "cover penetrations" is logical—a "cover penetration" should not present a significant emissions concern if it does not reach the waste mass, and most do not, so only those deep enough to reach waste warrant monitoring.

Although EPA's clarification in the preambles to the Final Rules is helpful and appreciated, Petitioners are concerned that some risk of confusion remains without a codified definition of "cover penetrations." Therefore, Petitioners respectfully request that EPA convene a rulemaking proceeding to adopt a clear definition of "cover penetrations" into the regulatory text to codify the guidance that EPA has provided in its preambles.

IV. Petition for Reconsideration

Pursuant to Section 307(d)(7)(B) of the CAA, EPA "shall convene a proceeding for reconsideration of [a] rule and provide the same procedural rights as would have been afforded had this information been available at the time the rule was proposed" so long as the party seeking reconsideration can demonstrate: (1) "that it was impracticable to raise such objection" during the public comment period or that "the grounds for such objection arose after the period

for public comment (but within the time specified for judicial review)"; and (2) "such objection is of central relevance to the outcome of the rule." 42 U.S.C. § 7607(d)(7)(B). An objection "is of central relevance to the outcome of [a] rule" when that objection "provides substantial support for the argument that the regulation should be revised." *Coalition for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102, 125 (D.C. Cir. 2012). EPA's Final Rules present several issues that meet these two criteria. As set forth herein, several aspects of the Final Rules were added after proposal, which fundamentally change the considerations addressed by commenters at proposal and significantly increase the compliance burden and overall impact of the Final Rules. Therefore, EPA must convene a reconsideration proceeding on the issues identified in this Section IV.

In addition, EPA's Final Rules are unlawful because EPA failed to provide adequate notice of many critical aspects of them. The United States Court of Appeals for the District of Columbia ("D.C. Circuit") has held that lack of notice claims are subject to the CAA reconsideration process, and so Petitioners raise those claims here as well. *See EME Homer City v. EPA*, 795 F.3d 118, 137 (D.C. Cir. 2015). With regard to the notice that EPA is required to provide in promulgating CAA rules, the D.C. Circuit has consistently held that EPA does not satisfy the Act's notice and comment requirement when the final rule is not the "logical outgrowth" of the proposed rule. *See e.g. Envtl. Integrity Project v. EPA*, 425 F.3d 992, 996 (D.C. Cir. 2005); *Northeast Maryland Waste Disposal Authority v. EPA*, 358 F.3d 936, 951-52 (D.C. Cir. 2004). A requirement in a final rule is the logical outgrowth of a proposed rule only if "interested parties should have anticipated that the change was possible, and thus reasonably should have filed their comments on the subject during the notice-and-comment period." *Northeast Maryland Waste Disposal Authority*, 358 F.3d at 952. The "logical outgrowth

doctrine does not extend to a final rule that finds no roots in the agency's proposal because something is not a logical outgrowth of nothing." *Envtl. Integrity Project*, 425 F.3d at 996. EPA's Final Rules fails to meet the D.C. Circuit's standard for adequate notice, and thus should be reconsidered for that reason, as well as the substantive issues explained in more detail below.

A. Tier 4

The Tier 4 provisions of the Final Rules provide an alternative for determining when a landfill must install a GCCS after it has exceeded the NMOC emission threshold of 34 Mg/year based on modeled emissions. The Tier 4 methodology is based on a demonstration that site-specific surface methane emissions remain below 500 ppm, and thereby justify postponing the requirement to install a GCCS. Although the Tier 4 methodology was generally included in the Proposed Rules, the Final Rules include certain critical elements of Tier 4 that were not subject to notice and comment, are of central relevance to the Final Rules, and must be subject to reconsideration.[13]

At proposal, EPA characterized the Tier 4 methodology as a "flexibility" that could allow a landfill to potentially mitigate the impacts of the new 34 Mg/year NMOC emission threshold if site-specific conditions allowed, while at the same time encouraging early adoption of emission reduction strategies and best management practices such as oxidative cover practices and early gas collection or control to minimize surface emissions. *See e.g.* 80 Fed. Reg. at 52115-16 & 80 Fed. Reg. at 52127-28. EPA further described Tier 4 as the result of EPA's outreach to small entities who were concerned with their ability to comply with the lower NMOC emission threshold. *See* 80 Fed. Reg. at 52128.

[13] Certain aspects of the Tier 4 issues identified in Section IV.A.3, below, were subject to public comment. Nevertheless, such issues add to the burden associated with EPA's approach to Tier 4 in the Final Rules and significantly reduce the method's intended flexibility. As a result, Petitioners request that EPA address such issues in conjunction with a reconsideration proceeding on the other Tier 4 issues identified in this section.

Many stakeholders including Petitioners, the Small Business Administration, state agencies, and environmental groups submitted comments in favor of Tier 4. Commenters agreed with EPA's analysis that a workable Tier 4 option would incentivize early adoption of methane reduction practices like alternative covers and early installation of collection and control equipment.[14] However, the changes to the Tier 4 methodology that are discussed herein have resulted in a method that is fundamentally different and more burdensome than the proposed Tier 4 that was broadly supported by diverse stakeholders. Such changes permanently alter the availability and utility of Tier 4, thereby removing much of EPA's intended flexibility from the Final Rules and providing no incentives to drive early emission reductions, which undermines the Agency's purpose in developing Tier 4 in the first instance.

At proposal, Tier 4 was available to any landfill with NMOC emission rates above 34 Mg/year. *See* 80 Fed. Reg. at 52148, 52152. In the Final Rules, however, EPA for the first time restricted the use of Tier 4 to landfills with modeled NMOC emission rates between 34 and 50 Mg/year using Tiers 1 or 2. *See* 40 C.F.R. 60.764(a)(6) & 40 C.F.R. 60.35f(a)(6); *see also* 81 Fed. Reg. at 59355 (describing 50 Mg/year cap on Tier 4 methodology as "change" to proposed Tier 4). EPA also introduced in the Final Rules a requirement that when average wind speeds exceed 4 mph and wind gusts exceed 10 mph, landfills must use undemonstrated wind barrier technology when conducting Tier 4 SEM. 40 C.F.R. § 60.764(a)(6)(iii)(A); 40 C.F.R. § 60.35f(a)(6)(iii)(A). In order to determine whether a wind barrier is required during a Tier 4 sampling event, the Final Rules mandate that a landfill must measure wind speeds with an anemometer. *Id.* EPA has also imposed burdensome notification requirements for Tier 4

[14] *See e.g.* Environmental Defense Fund, Comments on 2015 Supplemental Proposal, Docket ID EPA-HQ-OAR-2003-0215-0204 & EPA-HQ-OAR-2014-0451-0181; NACAA 2015 Comments; U.S. Small Business Administration's Office of Advocacy, Comments on 2015 Supplemental Proposal, Docket ID EPA-HQ-OAR-2003-0215-0187 & EPA-HQ-OAR-2014-0451-0155; WM 2015 Comments.

monitoring based on weather-related cancellation events, which require landfill owners and operators to notify EPA or the relevant state administrator no later than 48 hours before a scheduled Tier 4 monitoring event if such event needs to be postponed due to weather conditions. *See* 40 C.F.R. § 60.767(l); 40 C.F.R. § 60.738(m). These aspects of Tier 4 were not subject to public comment and, as set forth herein, have fundamentally changed the nature of the proposed Tier 4, making the method unrecognizable from that which EPA proposed and industrial, environmental, and governmental commenters favored.

1. Tier 4 Should Not Be Limited to Landfills With Modeled NMOC Emission Rates Between 34-50 Mg/year

The proposed Tier 4 would have been available to all "landfills that exceed modeled NMOC emission rates using Tiers 1, 2, or 3" as a way "to demonstrate that site-specific surface methane emissions are low." 80 Fed. Reg. at 52102. A landfill that could demonstrate that surface emissions are "below 500 parts per million (ppm) for 4 consecutive quarters would not trigger the requirement to install a GCCS even if Tier 1, 2, or 3 calculations indicate that the 34 Mg/yr threshold has been exceeded." 80 Fed. Reg. at 52102. Under the Final Rules, however, Tier 4 is limited to sites with modeled NMOC emission rates between 34 and 50 Mg/year using Tiers 1 or 2. *See* 40 C.F.R. §§ 60.764(a)(6) and 40 C.F.R. 60.35f(a)(6).

EPA seeks to justify the limitation of Tier 4 to sites with modeled NMOC emission rates between 34 and 50 Mg/year by arguing that the limitation was necessary to "avoid[] a potential conflict between what is required under [the Final Rules] and what is required by [the Landfill NESHAP]." 81 Fed. Reg. at 59355 & 81 Fed. Reg. at 59298-99. EPA's rationale for restricting Tier 4 to landfills with modeled NMOC emissions between 34 and 50 Mg/year because of a potential conflict with the Landfill NESHAP is not a compelling justification; it is not based on a well-supported technical rationale, and is instead based only on the Agency's half-hearted

attempt to ensure that its own regulations can be applied in harmony. As set forth in Section III above, EPA failed to address the inconsistency between the Landfill NESHAP and the Final Rules, and in the case of Tier 4, simply altered its applicability criteria in a manner that fails to fully address that inconsistency.

Limiting Tier 4 to sites between 34 and 50 Mg/year will adversely affect a substantial number of landfills subject to the Final Rules. EPA has identified only 105 (12 Subpart XXX sites and 93 Subpart Cf sites) of the total 1142 combined sites that will be subject to either Subpart XXX or Cf that are expected to have NMOC emissions between 34 and 50 Mg/year at up through 2025. This total is less than 10% of all sites affected by the Final Rules. *See* 81 Fed. Reg. at 59362 (Table 2) and 81 Fed. Reg. at 59305 (Table 2). WM, for instance, has identified only seven existing landfills with modeled NMOC emission rates between 34 and 50 Mg/year using Tiers 1 and/or 2, and which would be eligible to use Tier 4. WM has identified an additional seven sites with modeled NMOC emission rates currently below 34 Mg/year using Tiers 1 and/or 2, which WM anticipates will exceed the 34 Mg/year NMOC emission threshold in the next few years. Such landfills may be eligible to use Tier 4 if their modeled NMOC emission rates do not exceed 50 Mg/year. At all other WM landfills, Tier 4 would be unavailable regardless of the site-specific surface methane emissions at those sites. This is an inequitable result and conflicts with the intended purpose of Tier 4 to provide flexibility and encourage the early adoption of emission reduction strategies.

2. New Wind-Related Restrictions On Tier 4 Monitoring Are Unsupported

EPA proposed to limit the use of Tier 4 when the average wind speed exceeds 5 miles per hour and the instantaneous wind speed exceeds 10 miles per hour. *See* 80 Fed. Reg. at 52135-36. The Petitioners, among other commenters, submitted comments urging EPA not to finalize the

proposed wind-speed restrictions, which Petitioners identified as unsupported by the available science and unduly restrictive. *See e.g.* WM 2015 Comments at 15-16. Neither Petitioners nor any other commenters submitted comment on use of a wind barrier as an alternative to the wind-speed restrictions because there was no indication in any of EPA's proposals that would suggest wind barriers were under consideration. Nevertheless, in the Final Rules, EPA replaced the proposed wind restriction with a requirement to use a wind barrier whenever "average wind speed exceeds 4 miles per hour or 2 meters per second or gust exceeding 10 miles per hour." 40 C.F.R. §§ 60.764 (a)(6)(iii)(A) & 40 C.F.R. 60.35f(a)(6)(iii)(A). EPA must reconsider use of the wind barrier and related obligations because EPA has failed to support the wind-speed restrictions with required and relevant analysis, has not undertaken to demonstrate that wind-barrier technology is available to be implemented at subject landfills, and has greatly underestimated the increased burden such requirements will impose on sites with low site-specific surface emission rates.

a. Lack of Scientific Basis for Wind-Speed Restrictions

In the Final Rules, EPA fails to provide a justifiable rationale for the need for wind speed restrictions and to explain why the Agency decided to lower the average permissible wind speed for conducting Tier 4 monitoring from 5 mph to 4 mph. In fact, EPA's only discussion of average permissible wind speed is borrowed from the 2015 Supplemental Proposal, in which EPA notes that the Agency included the wind speed restrictions in the Final Rules "because air movement can affect whether the monitor is accurately reading the methane concentration during surface monitoring." 81 Fed. Reg. at 59356; 81 Fed. Reg. at 59298. EPA's conclusory statement regarding the impacts of air movement on SEM is not supported and thus provides insufficient justification for lowering the Tier 4 wind speed restrictions and requiring use of wind barriers. Although EPA states that the Agency has "concerns about whether monitors could

accurately read methane concentrations or provide representative results" in windy conditions, EPA fails to provide quantitative information to confirm that the accuracy and representativeness of SEM results are compromised in windy conditions. *Id.* The closest the Agency comes to providing a technical rationale is found in EPA's responses to interagency comments in which EPA attempts to justify the wind speed restrictions by referring to best practices guidance for the Agency's leak detection and repair regulations ("LDAR") and by providing a graphic from a non-peer-reviewed web blog purporting to show a relationship between measured carbon dioxide and wind speeds. *See* EO 12866 OMB correspondence on NSPS and Emission Guidelines Reviews for MSW Landfills (EPA-HQ-OAR-2003-0215-0238), pages 1513-1514 out of 3499 (hereinafter "Interagency Response to Comments Document"). These inappropriate comparisons do not justify the wind speed restrictions in the Final Rules as they are not related to SEM at landfills and EPA has not attempted to explain how they support such restrictions.

In addition to the Agency's failure to develop evidence demonstrating the need for wind restrictions on Tier 4 monitoring, EPA's assumptions about the impacts of wind speed on SEM results is misplaced. The Final Rules require probe placement during a Tier 4 monitoring event at no more than 5 cm (2 inches) above the landfill surface, thereby making it unlikely that wind or turbulence would interfere with the monitoring device. First, there is likely to be vegetation in landfill areas that would implement Tier 4 monitoring.[15] Given the tendency for herbaceous vegetation to act as a wind barrier, increasing friction and reducing turbulence, the monitoring device would be shielded when placed as required at 5 cm (2 inches) above the surface. Second,

[15] *See generally* Daniel P. Duffy, *Layer Upon Layer – Landfill covers come in many types and configurations*, Forester Daily News (Oct. 27, 2013) (available at http://foresternetwork.com/daily/waste/layer-upon-layer/); The Interstate Technology & Regulatory Council – Alternative Landfill Technologies Team, *Technical and Regulatory Guidance for Design, Installation, and Monitoring of Alternative Final Landfill Covers* (Dec. 2003) (available at http://www.itrcweb.org/GuidanceDocuments/ALT-2.pdf); Assal Edwar Haddad, *Use of Vegetative Mulch As Daily And Intermediate Landfill Cover* (2011) (Doctoral Thesis) (available at http://stars.library.ucf.edu/cgi/viewcontent.cgi?article=3042&context=etd).

wind speeds are typically stronger at higher altitudes and weaker closer to the surface because structures, trees, vegetation and other items create barriers that slow down the wind. The fact that wind speeds increase at higher altitudes also calls into question the utility of using an anemometer that is 10 meters above the ground, as it is unlikely that wind speeds at 10 meters above the ground would provide relevant data for surface measurements. Further, the installation of a single anemometer at each landfill (many of which encompass hundreds of acres) is unlikely to be representative of wind speeds across the entire landfill, given differences in topography, and the influence of surrounding forests, fields, and physical structures.

b. Wind-Speed Restrictions Are Unduly Burdensome

In addition to failing to articulate a justifiable basis to impose wind speed restrictions on Tier 4 monitoring, EPA severely underestimates the impacts such restrictions will have on the regulated community. An analysis of wind speed data for 292 cities provides data on average annual wind speed and seasonal (or quarterly) wind speeds across the United States.[16] Los Angeles is the only city in the data set that has an average wind speed under 4 mph for all four quarters of the year. Put another way, 291 cities (or more than 99% of cities in the dataset) have average seasonal wind speeds consistently above 4 mph and would therefore be required to use a wind barrier in order to conduct Tier 4 monitoring. This analysis is consistent with the memorandum by Eastern Research Group ("ERG") on the California Landfill Methane Rule ("CA LMR"), which concludes that 72% of landfills could not comply with the CA LMR's 5 mph wind speed restriction for surface monitoring and required a permanent alternative compliance option. *See* ERG, *Analysis of Surface Exceedances from California Landfills under the New Source Performance Standards and the California Landfill Methane Rule*, 4 (July 2015)

[16] WeatherDB, "Find Average Wind Speed across the US, accessed on October 11, 2016, https://wind-speed.weather.db.com

(Docket ID EPA-HQ-OAR-2003-0215-0233). Thus, it is clear that EPA's establishment of a wind speed restriction of 4 mph will require the use of a wind barrier by almost any landfill owner/operator who intends to implement Tier 4 to demonstrate that site-specific methane surface emissions are below 500 ppm.

This profound impact is compounded by the fact that EPA has not developed a consistent methodological approach to the use of wind barriers. Although almost every landfill that uses Tier 4 will be required to employ wind barrier technology, EPA has provided no direction on how to implement the wind barrier requirement in a consistent manner across the United States. EPA has indicated that the Agency intends to provide guidance on this topic, but as of yet has failed to take required actions to ensure that this approach can be properly implemented by the regulated community. *See* 81 Fed. Reg. at 59342 and 81 Fed. Reg. at 59291 ("Although we are aware of the use of wind barriers in the field, the EPA intends to provide additional guidance on their use."). As an example of an aspect of Tier 4 that may prove unworkable in practice, Petitioners note that the requirement to place the sampling probe "no more than 5cm above the landfill surface" as based on "a mechanical device such as with a wheel on a pole" may be infeasible. 40 C.F.R. § 60.764(a)(6)(iii); 40 C.F.R. § 60.35f(a)(6)(iii). Landfills tend to have uneven surfaces covered by vegetation and other obstacles. EPA also states that the wind barrier must surround the surface emission monitor and must be placed "on the ground" to ensure that wind turbulence is blocked. *See* 81 Fed. Reg. at 59373; 81 Fed. Reg. at 59317. Petitioners are not aware of any wind barrier capable of being placed on the ground that would not also prohibit the required probe placement at no more than 5cm above the landfill surface. Petitioners also note that EPA has not demonstrated that the wind barrier is compatible with Section 8.3.1 of Method 21, which the Final Rules require Petitioners to follow to meet the Tier 4 requirements.

See 40 C.F.R. § 60.764(a)(6)(iii); 40 C.F.R. § 60.35f(a)(6)(iii). Furthermore, Petitioners believe that use of a mechanical device on a wheel would result in the wind barrier breaking away from the monitoring setup, or damaging the analyzer probe. These concerns underscore the fact that EPA should have developed a consistent methodological approach to the use of wind barriers and demonstrated the feasibility of Tier 4 before finalizing the Final Rules.

EPA has also not provided a single piece of evidence in the Final Rules or related dockets substantiating that wind barriers will work reliably at a majority of landfills. EPA purports to have included the wind barrier requirement to allow landfills to conduct Tier 4 monitoring in windy conditions. However, the Agency has not demonstrated that the use of such barriers will provide for consistent and reliable SEM results.

EPA's 48-hour cancellation requirement is an added burden, requiring the landfill owner/operator to rely on a weather forecast 48 or more hours in advance of a planned Tier 4 monitoring event to determine if it should be cancelled due to weather conditions. 40 C.F.R. § 60.767(l)(2); 40 C.F.R. § 60.38f(m)(2). The notification requirement that EPA has inserted in the Final Rule ignores the reality that weather forecasts change often and significantly. Instead of making a timely determination whether to proceed with Tier 4 monitoring on a given day, an owner/operator may be forced to make a decision to cancel Tier 4 monitoring events two or more days before the event, simply to avoid making a weather-related cancellation less than 48 hours before the scheduled date due. Landfill owners and operators cannot be expected to predict the weather and must be given the flexibility to assess changing weather conditions prior to monitoring. But the current approach makes it significantly more likely that Tier 4 monitoring events will be delayed frequently due to uncertainty about weather conditions, thereby

complicating the coordination efforts necessary to use Tier 4, increasing the compliance burden and potentially leading to missed quarterly monitoring events.

For all of the foregoing reasons, Petitioners request that EPA reconsider the following aspects of the Final Rules: (1) the limitation on the use of Tier 4 to landfills with modeled NMOC emission rates between 34 and 50 Mg/year; and (2) the Tier 4 wind speed restrictions and associated wind barrier requirement because these changes have altered the fundamental nature of Tier 4 in a manner that Petitioners could not have foreseen.

3. Other Tier 4 Issues

In addition to the issues previously discussed in this section, Petitioners have identified a number of other issues in the Tier 4 provisions of the Final Rules that were subject to public comment, but that EPA has failed to address and that further limit the flexibility the Agency intended to provide to landfills through the inclusion of Tier 4. We request that the Agency consider the following aspects of Tier 4 in conjunction with the reconsideration proceeding requested above.

a. Tier 4 Monitoring Procedures Should Include Corrective Action

The Final Rules do not provide a corrective action period for Tier 4 monitoring exceedances, thereby rendering Tier 4 unworkable and undercutting EPA's stated intention of encouraging the early adoption of alternative control techniques. In their comments, Petitioners urged EPA to include a single, 10-day corrective action period for each exceedance of the 500 ppm methane emission threshold. Petitioners stated that without a single, 10-day corrective action opportunity, Tier 4 would be less effective as a good predictor of the appropriate timing for GCCS installation, and that landfill owner/operators will be less likely to use Tier 4 if a

17cv01906 Sierra Club v. EPA ED_001523_00005679-00044

single exceedance results in the obligation to install a GCCS. *See e.g.* NWRA & SWANA 2015 Comments at 18; WM 2015 Comments at 14-15.

Numerous states and the Small Business Advocacy Review Panel agreed with Petitioners' comments about the need for a corrective action concept to accompany Tier 4. Specifically, the Small Business Advocacy Review Panel concluded in its report on the proposed Final Rules that "Tier 4 should allow for corrective action when surface emissions above 500 [ppm] are identified, consistent with corrective action provisions for quarterly surface monitoring. Without corrective action allowances, the usefulness of Tier 4 is limited." SBARP Final Report at 7-8.

EPA has not stated a justifiable rationale for its decision to exclude from the Final Rules a 10-day corrective action period for Tier 4 exceedances. Instead, EPA explains its action with the unsubstantiated claim that a single exceedance of the "500 ppm threshold . . . would be indicative of higher emissions than would normally be expected at a landfill" and that "landfill conditions warrant installation of a GCCS." 81 Fed. Reg. at 59355. In the Agency's Response to Comments Document, EPA further explains that it is "not allowing for corrective action as part of the Tier 4 demonstration to ensure that landfills employ operational practices that minimize emissions." Response to Comments Document at 564. Such statements are simply incorrect; a single surface emission exceedance that can be corrected is most likely an indication of a localized anomaly in cover or other site-specific factors and *not relevant* to a general conclusion as to overall levels of surface emissions throughout a landfill.

EPA's explanation fails to recognize that the lack of a corrective action concept in Tier 4 will render Tier 4 impracticable to use, and will discourage the adoption of early emission reduction strategies such as oxidative covers and early gas collection and control.

Thus, EPA must revise Tier 4 to allow for a single, 10-day corrective action period prior to requiring a landfill to begin the process of installing a GCCS.

b. The Final Rules Should Be Clarified to Address When Landfills Are Permitted to Use Tier 4

At proposal, a landfill owner/operator would have been permitted to use Tier 4 after a demonstration with Tier 1, Tier 2, *or* Tier 3 that the landfill's NMOC emission rates are above the GCCS installation threshold. *See* 80 Fed. Reg. 52102 & 52112. Under the Final Rules, however, it is unclear what emissions modeling method a landfill owner/operator must use before it may implement Tier 4 monitoring. For example, in the test methods and procedures section of the Final Rules, "Tier 4 is allowed only if the landfill owner or operator can demonstrate that NMOC emissions are greater than or equal to 34 Mg/yr but less than 50 Mg/yr using Tier 1 *or* Tier 2," suggesting that a landfill need not conduct both Tier 1 *and* Tier 2 before moving on to Tier 4, and that Tier 3 measurements are not relevant to Tier 4 implementation. 40 C.F.R. § 60.764(a)(6); 40 C.F.R. § 60.35f(a)(6). Another provision in the Final Rules, however, states that landfill owners and operators may use Tier 4 if Tier 1, Tier 2, *or* Tier 3 show a calculated NMOC emission rate between 34 and 50 Mg/year. *See* 40 C.F.R. § 60.762(b)(2) & 40 C.F.R. § 60.33f(e)(2). Adding further to the confusion, the Final Rules state that the annual Tier 4 surface emission report must include, *inter alia*, "the results of the most recent Tier 1 *and* Tier 2 results in order to verify that the landfill does not exceed 50 Mg/yr of NMOC."[17] 40 C.F.R.

[17] This provision in the Final Rules may suggest that a landfill will conduct yearly Tier 1 and Tier 2 measurements to verify that estimated NMOC emissions continue to remain between 34 and 50 Mg/year, the results of which must be included in the annual Tier 4 surface emission reports. Landfill owners and operators must not be expected to conduct annual Tier 1 and Tier 2 monitoring after a landfill has begun implementing Tier 4. A requirement to conduct annual Tier 1 and Tier 2 testing would be inconsistent with the use of Tier 4, which more accurately accounts for emissions by measuring site-specific surface methane concentrations. Furthermore, EPA has not considered the costs that would be associated with an annual obligation to conduct Tier 1 and Tier 2 tests after moving on to Tier 4. Thus, EPA must clarify that landfills using Tier 4 need not conduct annual Tier 1 and Tier 2 tests. EPA must further clarify that only the initial Tier 4 surface emission report must include the results of any Tier 1 or Tier 2 test.

17cv01906 Sierra Club v. EPA ED_001523_00005679-00046

§ 60.767(c)(4)(iii); 40 C.F.R. § 60.38f(d)(4)(iii). EPA must revise the Final Rules to clarify for landfill owners and operators exactly what methods a landfill must perform prior to implementing Tier 4 monitoring.

c. The Final Rules Should Be Clarified to Address the Timing of GCCS Installation and Operation for Sources Using Tier 4

Under the Final Rules, landfills meeting the rules' design capacity thresholds are required to submit a GCCS design plan within one year of the first NMOC emission rate report in which the modeled NMOC emission rate exceeds 34 Mg/year using Tiers 1, 2, or 3, and to install and operate a GCCS within 30 months of the first NMOC emission rate report in which the modeled NMOC emission rate exceeds 34 Mg/year using Tiers 1, 2, or 3. *See* 40 C.F.R. §§ 60.762(b)(2) & 767(c); 40 C.F.R. §§ 60.33f(b)(1) & (e)(2), 38f(d). However, a landfill using Tier 4 must submit a GCCS design plan within one year of the first measured concentration of methane of 500 parts per million or greater from the surface of the landfill, and must install and operate a GCCS within 30 months of the most recent NMOC emission rate report in which the NMOC emission rate equals or exceeds 34 Mg/year based on Tier 2. 40 C.F.R. § 60.764(a)(6); 40 C.F.R. § 60.35f(a)(6). By linking GCCS installation and operation for sources using Tier 4 to the Tier 2 NMOC emission rate report rather than the triggering surface methane exceedance under Tier 4, EPA has reduced the amount of time a Tier 4 source has to install and operate a GCCS.

Under this framework, sources using Tier 4 will have less than 30 months – in some cases significantly less – to install and operate a GCCS. A landfill using Tier 4 will necessarily measure a surface methane emission exceedance *after* submitting its "most recent" NMOC emission report. For example, a landfill may measure a surface methane exceedance nearly 12 months after submittal of an NMOC report, but before a new NMOC emission report is due.

Under this scenario, that Tier 4 source would only have around 18 months to install and operate a GCCS. Clearly EPA could not have intended this inequitable situation for Tier 4 sources, which further reduces the incentives to use Tier 4 and adopt early emission reduction strategies. Thus, EPA must revise the Final Rules to clarify that Tier 4 sources would be required to install and operate a GCCS 30 months from the date on which a surface methane exceedance of 500 ppm is measured using Tier 4.[18]

d. The Final Rules Should Clarify the Process for Submitting Annual Tier 4 Surface Emission Report

The Final Rules state that the initial Tier 4 surface emission report "must be submitted annually, starting within 30 days of completing the fourth quarter of Tier 4 surface emissions monitoring that demonstrates that site-specific surface methane emissions are below 500 [ppm] methane." 40 C.F.R. § 60.767(c)(4)(iii) & 40 C.F.R. § 60.38f(d)(4)(iii). The Final Rules further state that in the event that Tier 4 monitoring reveals a surface exceedance of 500 ppm methane, a Tier 4 surface emissions report must be submitted "within 1 year of the first measured exceedance." *Id.* It is not clear if EPA intends this to be a separate surface emission report than the one required to be submitted annually.

Petitioners urge EPA to clarify the surface emission reporting requirements for Tier 4 sources, and recommend that EPA require the initial report to be submitted following the 4th quarter of SEM, with annual submissions thereafter. Petitioners further urge EPA to allow Tier 4 sources a minimum of 60 days to submit the initial report, instead of the 30 days currently

[18] Petitioners submitted comments to EPA urging the Agency to fix inconsistencies in the proposed Final Rules as to the timing of GCCS design plan development and installation for Tier 4 sources. In the Response to Comments Document, EPA claims to have "revised the final NSPS and Emission Guidelines to make the submittal dates clear" for Tier 4 sources. Response to Comments Document at 546. However, EPA's revisions have created additional confusion and burdens for sources choosing to use Tier 4.

17cv01906 Sierra Club v. EPA ED_001523_00005679-00048

included in the Final Rules. This additional time is necessary to account for the volume of information that must be included in such reports.

In addition, Petitioners believe that EPA has mistakenly included the language in the Final Rules that requires a landfill to submit a Tier 4 surface emission report within one year of a measured exceedance. Once a landfill measures surface methane concentrations above 500 ppm, Tier 4 monitoring is no longer permitted under the Final Rules, and the landfill is required to begin the process for installation and operation of a GCCS. Thus, there is no reason to submit a Tier 4 surface emission report in such a situation. Petitioners request that EPA clarify the submittal requirements for Tier 4 surface emission reports.

e. Tier 4 Recordkeeping Requirements Should Be Reduced

Under the Final Rules, landfills that employ Tier 4 must "keep for at least 5 years up-to-date, readily accessible records of all surface emissions monitoring and information related to monitoring instrument calibrations." 40 C.F.R. § 60.768(g); 40 C.F.R. § 60.39f(g). Such records must include, *inter alia*, a timestamp of "each surface scan reading . . . detailed to the nearest second, based on when the sample collection begins" and a "log for the length of time each sample was taken using a stopwatch (e.g., the time the probe was held over the area)" and the location "of each surface scan reading" showing "coordinates using an instrument with an accuracy of at least 4 meters." *Id.*

EPA has failed to articulate a basis to require such records. The obligation to maintain timestamp and location records *for all surface emission readings*, not only methane readings at or above 500 ppm, will be a significant burden. Typically, SEM is performed by a single technician. However, the timestamp and location records will increase the manpower necessary to perform SEM, increasing costs of Tier 4 and further limiting the intended flexibility the method is meant to provide to subject landfills. For example, a single technician will not be able

to operate the surface monitoring device, a stopwatch, and a GPS device at the same time. Additionally, EPA has failed to demonstrate the availability of GPS devices with accuracy of four meters. Petitioners believe that the current practice of placing flags at monitoring locations is more accurate, and would not be improved upon by the use of a GPS device. EPA should streamline the recordkeeping requirements associated with Tier 4.

f. EPA Failed to Consider the Costs Associated With Tier 4

Despite the fundamental changes to Tier 4 that have been highlighted above, EPA has completely failed to consider the costs associated with Tier 4 in the Final Rules. A review of the Interagency Response to Comments Document shows that commenters urged EPA to consider the costs of Tier 4 in the Final Rules. EPA claimed that the Agency lacked necessary data and that "the cost to conduct a Tier 4 analysis is site specific depending on the acreage of each landfill opting to pursue Tier 4 monitoring. Due to all of these uncertainties the EPA has not costed out Tier 4." Interagency Response to Comments Document at 422 out of 3499. EPA further noted that it decided not to determine the costs of Tier 4 because Tier 4 is voluntary.

EPA's explanation that the Agency failed to consider costs because Tier 4 is a site-specific, voluntary methodology is unpersuasive. Given the prescriptive nature of the final Tier 4, it is not clear what EPA means when the Agency says that an analysis of Tier 4's costs would be site specific – all regulations have "site-specific" costs associated with their implementation. Furthermore, despite EPA's claims that the site-specific nature of Tier 4 makes quantifying costs too difficult, Petitioners have identified a number of factors EPA could and should have considered to determine the costs of Tier 4, including (1) capital costs for all newly required equipment; (2) costs for surveys, perhaps on a "per acre" basis; and (3) additional expenses associated with cancelled monitoring surveys due to wind-related issues, additional surface monitoring technicians, etc. EPA must account for the costs of Tier 4.

B. Liquids Addition Reporting

EPA has conceded that the Agency does not have sufficient data to impose separate standards on landfills that add liquids. *See* 81 Fed. Reg. at 59345 & 81 Fed. Reg. at 59289 ("EPA did not receive sufficient data to support a separate subcategory for landfills adding leachate or other liquids."). Nevertheless, under the Final Rules, a landfill with a design capacity of 2.5 million megagrams and 2.5 million cubic meters or more that has recirculated leachate or added liquids based on a Resource Conservation and Recovery Act ("RCRA") Research, Development, and Demonstration ("RD&D") permit within the last 10 years must prepare and submit an annual report that contains voluminous information about liquids addition practices ("Annual Liquids Addition Report"). 40 C.F.R. § 60.767(k); 40 C.F.R. § 60.38(f)(l). EPA did not introduce the concept of the Annual Liquids Addition Report until the Final Rules, thus providing no notice or opportunity to comment on the new reporting requirement.

Although EPA acknowledged in both the 2014 Proposal and 2015 Supplemental Proposal that the Agency was considering the development of alternative requirements for landfills that add liquids, EPA never proposed that such landfills would be subject to additional reporting obligations under the Final Rules in the absence of substantive compliance obligations. In the 2014 Proposal, EPA solicited comments as to whether the Agency should consider reducing the design capacity threshold and/or initial lag times for landfills located in a wet climate, or that recirculate leachate or add other liquids to the landfill. *See* 79 Fed. Reg. at 41808. EPA's solicitation of comments failed to provide clear notice of what exactly EPA was considering. In the 2015 Supplemental Proposal, EPA further solicited comment on alternative design thresholds and lag times for landfills located in wet climates or that add liquids. *See* 80 Fed. Reg. at 52137-38. At no point during the notice and comment period, however, did EPA propose an annual reporting obligation exclusively for such landfills.

Given that EPA did not provide an opportunity to comment and has acknowledged that EPA currently cannot justify separate standards for landfills that add liquids, EPA must convene a reconsideration proceeding to allow comment on this issue.

1. Annual Reporting Requirement is Unduly Burdensome

EPA appears to have based the adoption of the liquids addition reporting requirements in part on a mistaken understanding of the relative impact of the Annual Liquids Addition Report. EPA stated in the preambles to the Final Rules that "EPA believes many landfills . . . already keep [liquids addition] records and may submit reports containing quantities of liquids added. So, the effort to track these additional data is expected to be minimal." 81 Fed. Reg. at 59350; 81 Fed. Reg. at 59295. EPA is mistaken, however, as the Annual Liquids Addition Report will require Petitioners to expend significant effort that far exceeds any benefit of such report. The Annual Liquids Addition Report imposes new and extensive recordkeeping requirements that are materially different and substantially more burdensome than what is required of landfills recirculating leachate or operating bioreactor landfills pursuant to RCRA RD&D permits and Subpart HH of EPA's Mandatory Greenhouse Gas Reporting Program (40 C.F.R. Part 98).

The Annual Liquids Addition Report imposes new and extensive recordkeeping requirements in the Final Rules that are materially different than those typically required by RD&D permits. EPA estimates that approximately 30 MSW landfills operate with RD&D permits, of which WM operates five. *See* Revision to the Research Development and Demonstration Permits Rule for Municipal Solid Waste Landfills, 81 Fed. Reg. 28720-28724, 28721 (May 10, 2016) ("There are approximately 30 facilities currently operating with RD&D permits."). Thus, EPA incorrectly assumes that many landfills keep records of liquids addition pursuant to RD&D permits. Additionally, those landfills that do operate under RD&D permits are expected to provide data in a materially different manner than would be required under the

Annual Liquids Addition Report. Based on Petitioner's experience, RD&D permits typically require a moisture balance calculation that accounts for total liquids added to the waste mass including leachate recirculated, precipitation, and leachate collected. States generally require this moisture balance to be reported by landfill phase or bioreactor cell. Because liquids are typically added at the working face of the landfill or active phase, this area tends to be a moving phase over the course of a year, making it difficult to translate into a calculation of surface area and thereby determine waste in place. Thus, the Agency's assumption that many of the data elements in the Annual Liquids Addition Report are tracked as part of a leachate management or RD&D permit is false and significantly underestimates the burdens associated with converting such data to a format that is compatible with the Annual Liquids Addition Report.

In addition, pursuant to the GHG Reporting Program, MSW landfills that exceed applicability thresholds must qualitatively report to EPA if the site recirculated leachate in the past 10-year period. Specifically, 40 C.F.R. § 98.346(a) requires an owner/operator to include in a report "an indication of whether leachate recirculation is used during the reporting year and its typical frequency of use over the past 10 years (e.g., used several times a year for the past 10 years, used at least once a year for the past 10 years, used occasionally but not every year over the past 10 years, not used)." If a subject facility did recirculate leachate in the calendar reporting year, then that site must collect data on the total volume of leachate recirculated and use this volume to determine which k-value to use for the reporting year (if applicable) according to Table HH-1 of 40 C.F.R. 98 Subpart HH.[19] Sites also report the annual waste acceptance

[19] Footnotes a and b to Table HH-1 state the following:

"[a]Recirculated leachate (in inches/year) is the total volume of leachate recirculated from company records or engineering estimates divided by the area of the portion of the landfill containing waste with appropriate unit conversions. Alternatively, landfills that use leachate recirculation can elect to use the k value of 0.057 rather than calculating the recirculated leachate rate.

rates, along with a characterization of the waste types (e.g., MSW, construction and demolition debris, and inert materials); however, Subpart HH does not require recordkeeping or reporting of volume of leachate recirculated, surface area where leachate has been recirculated over the course of a year, or quantity of waste disposed in areas of leachate recirculation, and such data cannot be readily extracted from Subpart HH reports. Further, reporting on leachate recirculation practices only commenced with the 2010 reporting year.

Given the differences between liquids reporting pursuant to RCRA RD&D Permits and the GHG Reporting Program, EPA incorrectly assumes that landfills already keep the information required by the Annual Liquids Addition Report and as a result greatly underestimates the burdens associated with such report.

2. The Final Rules Should Not Include a Reporting Obligation That is Unrelated to Any Compliance Obligation

As discussed above, EPA has acknowledged that the Agency "did not receive sufficient data to support a separate subcategory for landfills adding leachate or other liquids," and as a result decided not to adopt separate compliance requirements for landfills that add liquids. *See* 81 Fed. Reg. at 59345; 81 Fed. Reg. at 59289. Instead, EPA states in the Final Rules that "it is appropriate to further assess emissions from wet landfills prior to taking additional action." *Id.* Thus, EPA intends for the Annual Liquids Addition Reports to "inform potential action on wet landfills in the future." *Id.* EPA should not include reporting obligations that, by EPA's own acknowledgement, are unrelated to operative requirements in the Final Rules. Such obligations are arbitrary and capricious given that they bear no relationship to the rules at issue, and are unsupported by EPA's own data.

[b]Use the lesser value when precipitation plus recirculated leachate is less than 20 inches/year. Use the greater value when precipitation plus recirculated leachate is greater than 40 inches/year. Use the average of the range of values when precipitation plus recirculated leachate is 20 to 40 inches/year (inclusive). Alternatively, landfills that use leachate recirculation can elect to use the greater value rather than calculating the recirculated leachate rate."

17cv01906 Sierra Club v. EPA ED_001523_00005679-00054

EPA's authority to promulgate recordkeeping and reporting requirements is limited by Section 114 of the CAA. Section 114 allows EPA to require reporting for the following purposes: (1) developing regulations under Sections 110, 111, 112, or 129 of the CAA; (2) determining if a regulated entity is in violation of a CAA rule; or (3) carrying out a provision of the Act. *See* 42 U.S.C. § 7414(a). Although EPA has stated that the Annual Liquids Addition Reporting requirements are intended to inform potential future action, the Agency has failed to articulate why additional information is needed, having already determined that the creation of a subcategory for landfills that add liquids is not warranted. During the notice and comment period, EPA requested information about landfills located in wet climates or that add liquids. Based on the information submitted by the numerous commenters, EPA was unable to form a basis to impose separate regulations on such landfills. *See* 81 Fed. Reg. at 59345; 81 Fed. Reg. at 59289. Given that fact, it is unreasonable to require landfills to submit data when EPA has no basis to presume that such data would support separate standards. Furthermore, EPA clearly acknowledges in the Final Rules that the Annual Liquids Addition Reports are unrelated to any compliance obligation in the Final Rules.

Given the absence of any compliance obligation for landfills that add liquids, the inclusion of a free-standing reporting obligation within the Final Rules serves no compliance purpose and therefore is inconsistent with the provisions of Section 111 and cannot be justified under Section 114. EPA has not explained how an on-going reporting obligation for landfills that add liquids is consistent with the regulatory development aspects of Section 114. Furthermore, the Annual Liquids Addition Report is unnecessary given EPA's efforts to

comprehensively address landfills that add liquids in the Agency's forthcoming revisions to RCRA Subtitle D, Part 258.[20]

On reconsideration, EPA should remove the Annual Liquids Addition Report from the Final Rules.

C. Corrective Action Timeline Procedures

In the 2015 Supplemental Proposal EPA requested comments on the submittal of corrective action timelines. However, EPA's proposal did not include a specific schedule for submitting alternative timeline requests because EPA believed that investigating and determining the appropriate corrective action, as well as the schedule for implementing that corrective action, should be site specific and depend on the reason for exceedance. *See* 80 Fed. Reg. at 52126. In their comments, which addressed this subject, Petitioners agreed with EPA that corrective action schedules should be site specific.

However, the Final Rules contain a highly complex and prescriptive schedule for corrective action. The mandated schedule generally gives owners or operators only 60 days to investigate, determine appropriate corrective action, and implement the corrective action. If an exceedance cannot be corrected within 15 days, then a root cause analysis must be conducted within 60 days of the initial exceedance. Further, an implementation schedule is required for exceedances that will take longer than 60 days to complete the corrective action(s) as soon as practicable, but no more than 120 days. The regulatory provision that EPA adopted in the Final Rules to require this particular schedule for corrective action was not available for comment.

[20] In July 2016, EPA announced that the Agency will be requesting "information and data on the performance of wet landfills." EPA, 2016 Regulatory Agenda (available at http://www.reginfo.gov/public/do/eAgendaviewRule?pubId=201604&RIN=2050-AG86).

The original landfill rules (40 C.F.R. Subparts WWW and Cc) require the landfill owner/operator to take corrective action for exceedances on a set schedule and request alternative timelines as needed. The Final Rules, however, differ in that the schedule is far more complex and now require a root cause analysis and submission of a corrective action plan—new elements that EPA has never required previously and that were not included in any of EPA's proposals. *See* 40 C.F.R. § 60.765(a)(3)&(5); 40 C.F.R. § 60.36f(a)(3)&(5).

Rather, EPA's new complex corrective action requirements and procedure actually appear to be a response to a comment submitted by Republic, asking for an entirely different corrective action procedure, one that eliminates the approval process altogether to avoid the concerns that arise when EPA and states fail to issue their approval in a timely manner. Although Republic supported an approach that would include a root cause analysis and reporting of certain events, Republic did not support any requirement for the submission of corrective action plans for approval. *See* Republic 2015 EG Comments at 13. Thus, the corrective action requirements in the Final Rules are entirely new—the approach was never proposed by EPA or any commenter. Moreover, EPA's Final Rules do not address the primary focus of Petitioners' comments on the corrective action process—*i.e.*, Petitioners' concern that many alternative timeline requests are never approved because of a lack of agency review.

Because EPA provided no notice of its new corrective action requirements and procedure in any proposal, Petitioners could not have commented on it, and EPA's lack of notice constitutes a violation of its rulemaking requirements under the CAA. In addition, because the corrective action component is the primary compliance obligation imposed on landfills to ensure emissions are minimized through good operation of a gas collection and control system, the requirement is clearly of central relevance to the outcome of the Final Rules. Therefore,

Petitioners respectfully request that EPA reconsider its new corrective action requirements and procedure to allow Petitioners and the general public an opportunity to comment on it.

As part of the reconsideration proceeding, EPA should evaluate whether preparation of a root cause analysis and submission of a corrective action plan is necessary over and above simply reporting temperature or negative pressure events, as already required under the existing provisions of Subparts WWW and Cc. The root cause and corrective action plan creates additional recordkeeping burden that should only be added if EPA can demonstrate that it will achieve meaningful air qualify benefits. Background documents in the Interagency Response to Comments Document confirm that the approach proposed by Petitioners, not the approach finalized by EPA, would provide the EPA with sufficient assurances that timely and appropriate measures are taken to avoid hazards, such as landfill fires. Conversely, EPA has not yet demonstrated that its new requirements and procedure are needed to ensure proper operation of GCCS or provide any environmental benefits.

EPA should also reevaluate the costs of its new corrective action procedures, given that the Agency failed to conduct an adequate cost analysis as part of the Final Rules. Specifically, EPA appears to have underestimated the number of root cause analyses that its new provision will require. The EPA claims it does not have enough data to estimate how many landfills would need to conduct the root cause analysis each year, but even a cursory and conservative review of data that EPA references in the Interagency Response to Comments Document suggests one exceedance per year per landfill will likely require corrective action and root cause analysis. EPA should therefore review information from the existing program to provide an expected number of reportable incidents, the number of incidents likely to be resolved within the 15 day time period, the number of incidents likely to require a root cause analysis and corrective action

17cv01906 Sierra Club v. EPA ED_001523_00005679-00058

application, and the usual time (for State and Federal regulatory authorities separately) for approval and/or response to such application. During the reconsideration proceedings, EPA must accurately reflect the costs associated with the new corrective action procedures.

V. Petition for Administrative Stay of the Final Rules Pending Judicial Review

Petitioners respectfully request an immediate stay of the Final Rules. Pursuant to Section 705 of the APA, EPA may postpone the effective date of a regulation pending judicial review where "justice so requires." 5 U.S.C. § 705. EPA has expressly recognized that the Agency has broad authority under Section 705 of the APA to grant an administrative stay pending judicial review of a final rule that EPA has promulgated pursuant to the CAA.[21] Petitioners are simultaneously filing petitions for review of the Final Rules in the D.C. Circuit, and justice requires that the Final Rules be immediately stayed given the significant substantive and procedural flaws that have been identified in Sections III and IV of this Petition, which have rendered the Final Rules unworkable and unsupportable as presently constituted.

In considering motions to stay pursuant to APA Section 705, the D.C. Circuit considers the following four factors: (1) the likelihood that the party seeking the stay will prevail on the merits of the appeal; (2) the likelihood that the moving party will be irreparably harmed absent a stay; (3) the prospect that others will be harmed if the court grants the stay; and (4) the public interest in granting the stay. *See Cuomo v. U.S. Nuclear Regulatory Comm'n*, 772 F.2d 972, 974 (D.C. Cir. 1985). EPA must consider the same set of factors when deciding to grant a stay

[21] *See* EPA, *Industrial, Commercial, and Institutional Boilers and Process Heaters and Commercial and Industrial Solid Waste Incineration Unit – Final rules; Delay of effective dates*, 76 Fed. Reg. at 28662-28664, 28663 (May 18, 2011) ("EPA notes that it is delaying the effective date of the Major Source Boiler MACT and the CISWI Rule pursuant to the APA, rather than section 307(d)(7)(B) of the Clean Air Act. As explained above, the APA authorizes the EPA to find that justice requires postponing the effective date of a rule when litigation is pending."); see also *Sierra Club v Jackson*, 833 F. Supp. 2d 11, 24 (D.D.C. 2012) ("While the Clean Air Act establishes the process by which either EPA or a court may stay the effectiveness of a rule pending reconsideration, it does not by its terms or by logical implication limit the authority of either an agency or a court to exercise its traditional statutory authority under Section 705 of the APA to stay such rules or regulations pending judicial review.").

17cv01906 Sierra Club v. EPA ED_001523_00005679-00059

pursuant to APA Section 705. *Sierra Club*, 833 F. Supp. 2d at 50-51. Petitioners submit that the grounds for an administrative stay of the Final Rules pending judicial review are compelling in this instance and satisfy the statutory requirements for a stay under APA Section 705.

The Final Rules present precisely the circumstances in which an administrative stay pending judicial review is warranted given the significant regulatory uncertainty caused by the substantive and procedural errors in the Final Rules that have been discussed throughout this Petition. EPA's failure to address the overlapping applicability issues, identified in Section III.A, above, is perhaps the best example of how EPA's errors warrant an administrative stay pending juridical review. First, Petitioners are likely to prevail on the merits in challenging the Agency's unreasonable failure to address the overlapping applicability of the old subparts (WWW and Cc), the new subparts (XXX and Cf), and the Landfill NESHAP because the Final Rules are directly contrary to EPA's stated intent and contrary to CAA Section 111 definitions of "new" and "existing" sources by regulating many landfills as both. Second, Petitioners will incur irreparable harm as a direct result of the Agency's failure to resolve the overlapping applicability of the various standards because Petitioners will be forced to simultaneously comply with different and overlapping provisions from either the new or old subparts, forcing Petitioners to engage in two different sets of activities to ensure compliance with the old and new subparts. Thus, Petitioners will be forced to comply with both the old and new subparts without obtaining any benefit from the regulatory provisions that EPA intended to update and streamline with the Final Rules, and the losses that will result will not be recoverable from EPA in any legal proceeding. Third, no party will be harmed by EPA's decision to grant a stay of the Final Rules pending judicial review because Subparts WWW and Cc (and the state plans implementing Subpart Cc) will remain in effect, thereby ensuring that landfills continue to operate their GCCS

and meet the other operational standards of the old subparts, many of which have been carried over into Subparts XXX and Cf. Fourth and finally, granting the stay is within the public interest because, as noted above, EPA's intention to update and streamline the applicable Section 111 standards for MSW landfills has been undercut by the Agency's failure to enact appropriate applicability provisions in the Final Rules.

For all of the forgoing reasons, Petitioners respectfully request that EPA administratively stay the Final Rules rule pending judicial review.

Respectfully submitted,

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APPENDIX A

January 22, 2016

Via Electronic Transmission: ward.hillary@epa.gov
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Re: Docket ID No. EPA-HQ-OAR-2003-0215
Docket ID No. EPA-HQ-OAR-2014-0451

Dear Hillary,

The undersigned organizations representing both private and public landfill owners and operators offer the following supplemental comments to those our organizations have already submitted. After reviewing the comments submitted in response to the U.S. Environmental Protection Agency's (EPA or Agency) Supplemental Proposal for the New Standards of Performance (NSPS) for Municipal Solid Waste (MSW) Landfills and the Proposed Emission Guidelines (EG), we thought it might be helpful to you to clarify and re-emphasize some of the key points made in our earlier comments and reiterated by state officials and other organizations. We understand that the Agency is not required to consider these supplemental comments, as the comment period has closed. Nonetheless, we hope the Agency finds this document useful, and we appreciate your consideration of our supplemental comments as you work towards finalizing the rules.

We Strongly Support EPA's Proposed Removal of the Wellhead Operating Parameters for Temperature and Oxygen/Nitrogen, while maintaining Monthly Monitoring and Recordkeeping

Our organizations are very supportive of the EPA's proposal to eliminate the wellhead parameters for temperature, oxygen/nitrogen and rely on landfill surface emissions monitoring (SEM) requirements in combination with maintenance of negative pressure at wellheads to indicate proper operation of the gas collection and control system (GCCS) and minimize surface emissions.

In our comments, we described our concerns with required wellhead parameters that are counterproductive to optimally operating our gas collection and control systems and reducing emissions. For many years, these wellhead parameters have been among the most significant barriers to earlier installation of gas collection and control measures and in some cases to adequate surface emissions and migration control. We provided numerous examples of state agency determinations as illustrative examples. (See Waste Management Comments on Proposed XXX and ANPRM for EG, September 15, 2014, pg. 24-25, NWRA-SWANA Comments, September 15, 2014, pg. 7-8)

Our nearly two decades of experience implementing Subparts WWW and Cc has demonstrated that the temperature and oxygen/nitrogen parameters are poor indicators of landfill fires or inhibited waste decomposition. To comply with the arbitrary temperature and/or oxygen parameters, sites must often reduce landfill gas (LFG) flow to the affected well, thereby decreasing system performance and increasing potential emissions. Conforming to the wellhead operating parameters imposes significant administrative burdens on both regulatory agencies and the regulated community.

In reviewing the comments received by the Agency, we noted that the National Association of Clean Air Agencies (NACAA), which represents air pollution control agencies in 40 states, DC, four territories and 116 metropolitan areas, also supported eliminating the temperature and oxygen/nitrogen parameters. Additionally, the majority of state agencies and public organizations submitting separate comments including Colorado, Delaware, Georgia, Minnesota, Ohio, four Wisconsin county agencies, and the U.S. Small Business Administration (SBA) all supported eliminating the wellhead parameters for temperature and oxygen/nitrogen.

Several states were silent regarding the EPA's proposal, but strongly supported continued monitoring and recordkeeping of temperature and oxygen/nitrogen data. We also support continued monitoring and recordkeeping for those parameters. Several state commenters raised concerns they would no longer know if a landfill fire occurred; however, the rule requires landfills to report instances when positive pressure occurs in the wells and gas extraction system to avoid a fire. We also believe the Agency could alleviate some state agency concerns by requiring that the monitoring records be kept onsite and available for inspection, and that information suggested by NACAA and the State of Delaware (reporting of oxygen values exceeding 5% and temperature exceedances of 130 degrees F) be included in the facilities' semi-annual reports for informational purposes.

We Support EPA's Proposal with Recommended Amendments to use Tier 4 as an Alternative Approach to Determine when a Landfill must Install and Operate a GCCS, and when a Landfill can Cap or Remove GCCS due to Declining Flow

We strongly support the Agency's proposed use of Tier 4 as an alternative, site-specific emission measurement to determine the appropriate timing for installing and operating a GCCS. We believe that a SEM option will enhance decision-making regarding the timing and approach for controlling landfill gas emissions, and will incentivize sites to implement methane reduction practices as quickly as possible. EPA's proposal to allow use of Tier 4 SEM for landfills looking to cap or remove GCCS due to declining flow is also a welcome approach.

Providing landfill sites with the option to conduct a Tier 4 will more accurately identify changes in gas generation attributable to climate differences, waste age and composition, and other factors and avoids a "one-size-fits-all" with respect to when gas collection is warranted. This will be even more important into the future as we see greater diversion of organics from landfills. In addition, we expect use of a measurement-based approach, as opposed to modeling, will provide a more reliable assessment of emission fluxes, which is particularly important in cases where the results of the available models appear flawed.

All of the undersigned organizations recommended that the Agency's Tier 4 approach be modified to allow for a single, ten-day corrective action period to remedy each exceedance of the 500 part per million (ppm) threshold detected during a Tier 4 monitoring event.

We also urged EPA to delete the specific wind speed criteria and maintain the current Subpart WWW surface monitoring provisions for the performance of Tier 4 (i.e., "typical meteorological conditions").

The comments from states and other public organizations overwhelmingly supported the proposed Tier 4 to determine the appropriate timing for installation and removal of GCCS. The public entities included NAACA, and the States of Delaware, Iowa, Kentucky, New Mexico, Ohio, Oklahoma and

Pennsylvania, the Palm Beach Solid Waste Authority, four counties in Wisconsin, the Texas SWANA chapter and the SBA. The Environmental Defense Fund also commented in support of Tier 4, although they recommended a lower threshold than EPA proposed. The public organizations all supported the EPA proposed threshold of 500 ppm, and elimination of the wind speed limit on use of Tier 4. NACAA and the state and local government commenters discussed the potential implementation barrier the wind speed requirement would pose for using Tier 4. The vast majority of the public organizations, including NACAA also commented in favor of EPA including a brief, one-time corrective action period (e.g., ten-day) to remedy exceedances that can be addressed with simple corrections to landfill cover, or adjustments of the existing GCCS.

We Strongly Support EPA's Proposed Subcategory for Closed Landfills

The undersigned organizations continue to support the proposed subcategory for closed landfills and the proposed expansion of the subcategory to include landfills that close (cease accepting waste) within 13 months after publication of the final EG rules in the Federal Register. It is critical that landfill owners that are planning to cease accepting waste have the necessary time to meet all of the criteria and submit the necessary documentation for a "closed landfill" designation. Closed landfills that are required to control emissions under the existing EG or NSPS WWW would continue to operate the facilities, including GCCS, and reduce emissions in accordance with these rules.

In our review of the comments, none of the 15 state and local regulatory agencies that submitted formal comments, opposed the proposed closed landfill subcategory, nor did NACAA in its formal comments. The Pennsylvania Department of Environmental Protection (PA DEP) and the SBA affirmatively supported the closed landfill subcategory. PA DEP recommended that EPA expand the closed landfill subcategory to allow MSW owners to close within 13 months of final rule publication. The Small Business Administration stated that EPA should allow more landfills to close up until the state or Federal regulations implementing the revised EG are effective, particularly as EPA provided no practical notice to entities when they proposed the closed landfill subcategory that the cut-off date would be 7/17/2014.

Based on gas generation model results for closed landfills that report emissions to federal GHG reporting program, we estimate the proposed change to reduce non-methane organic compound (NMOC) threshold from 50 Mg to 40 Mg will prolong the requirement to operate GCCS another five years, and impose significant costs on landfills at the end of life. Reducing the threshold to 34 Mg/year will prolong operations by eight years.

Many closed landfills struggle to maintain sufficient gas flow to operate their control systems under the 50 Mg/year threshold. At a lower NMOC threshold, landfill owner/operators will need to use increasing amounts of fossil fuel to maintain flare operation. This increases GHG emissions, which conflicts with the Administration's Methane Reduction Plan.

Closed landfills do not generate revenue and many are owned by municipalities, which must pass new costs on to their local taxpayers. Closed site compliance costs are formulated based on settled expectations that new requirements (i.e., lower NMOC threshold) will not be triggered in the absence of a reopening or an expansion. Absent the proposed subcategory, including the 13-month timeframe expansion, closed landfill facilities will face significantly increased compliance costs and administrative burdens.

We Support Streamlining the Design Plan Approval and Update Process

Our organizations supported EPA's conclusion that review and approval of design plans is clearly a burden for many states. Two of our organizations, Waste Management and Republic Services, estimated that only 40 percent of their landfills operate pursuant to an approved design plan, and together the two companies own and operate about 50 percent of the MSW landfills in the U.S. Given this track record, we strongly support the Agency finalizing a process that eliminates the need for state approval of plans, which is a system that has simply not worked. Instead, state and local agencies and landfill owner/operators should be allowed to obtain and rely upon third-party professional engineer (PE) certification of design plans and revisions in lieu of an agency approval process. Certified plans may be maintained onsite for inspection and/or submitted to the implementing agency.

Subpart WWW in discussing design plan approval in Section 60.752 states, "*Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only, leachate collection components, and passive systems.*" No other NSPS rule includes such a statement about site-specific design variables, and this statement supports need for the PE review and certification rather than relying on agency staff unfamiliar with the highly site-specific nature of GCCS design.

A process that relies on independent PE certification would reduce administrative burdens on state agencies, while offering greater regulatory certainty for the regulated community and public. Further, use of state-licensed PEs would simplify the process. Landfill owner/operators have ready access to third-party PEs, who have the requisite experience and expertise in GCCS design, and state certification boards exist to oversee and license PEs.

The vast majority of the state organizations that commented on EPA's proposal for third-party verification of plans, including NACAA, opposed the proposal as we did. Most described third-party verification as expensive, burdensome and unnecessary. While a number of states were loath to give up their design plan approval authority saying it does not pose a burden, the nationwide record of implementing approvals does not support their argument.

Furthermore, EPA and the delegated state agencies' primary oversight of the GCCS system is not at the design plan stage, but rather through the permitting process when a landfill has triggered the need to install a GCCS. Landfills must apply to the regulators for a construction permit, and the state agency must permit control devices associated with the GCCS. This permitting authority gives states the best opportunity for oversight and approval. It is through permitting, as well as required wellhead pressure monitoring, surface emission monitoring, remediation of exceedances and required documentation of GCCS "as-built" conditions (all contained within required semi-annual reports), not review and approval of a conceptual design, which provides regulators ample oversight mechanisms to ensure GCCS is properly installed and operated.

There is significant precedent for submission of site-specific regulatory plans with no requirement for Agency approval. In fact, the proposal to require Agency approval of the both the design plan and treatment system monitoring plan is inconsistent with numerous federal rules that instead require copies (of management, monitoring or operating plans) to be submitted to the agency (no approval required) and/or maintained on site for agency inspection:

- 40 C.F.R. 98 Subpart A– GHG Mandatory Reporting Rule (GHG monitoring plan)
- 40 C.F.R. 60 Subpart Ec – HMIWI (waste management plan)
- 40 C.F.R. 60 Subpart F – Portand Cement Plants (monitoring plan)
- 40 C.F.R. 60 Subpart Ja – Petroleum Refineries (flare management plan)
- 40 C.F.R. 60 Subpart Ka – Storage Vessels (operations and maintenance plan)
- 40 C.F.R. 60 Subpart Y – Coal Preparation and Processing Plants (fugitive dust emissions control plan)
- 40 C.F.R. 60 Subpart GG – Stationary Gas Turbines (parameter monitoring plan)
- 40 C.F.R. 60 Subparts VV, VVa – Equipment Leaks SOCMI (monitoring and inspection plans for pumps, valves, closed vent systems)
- 40 C.F.R. 60 Subpart AAA – Residential Wood Heaters (Manufacturer's Quality Assurance Plan: note this plan is third-party certified)
- 40 C.F.R. 60 Subpart QQQ – Petroleum Refinery Wastewater Systems (plans/specification for various component or system design)
- 40 C.F.R. 60 Subpart AAAA – Small MWC Units (materials separation plan)
- 40 C.F.R. 60 Subpart CCCC – CISWI (waste management plan)
- 40 C.F.R. 60 Subpart DDDD – CISWI EG model rule (control plan, waste management plan)
- 40 C.F.R. 60 Subpart EEEE – OSWI (waste management plan)
- 40 C.F.R. 60 Subpart FFFF – OSWI EG Model rule (waste management plan)
- 40 C.F.R. 60 Subpart IIII – Stationary Compression Ignition Internal Combustion Engines (maintenance plan)
- 40 C.F.R. 60 Subpart JJJJ– Stationary Spark Ignition Internal Combustion Engines (maintenance plan)
- 40 C.F.R. 60 Subpart KKKK – Stationary Combustion Turbines (quality assurance plan, parametric monitoring plan)
- 40 C.F.R. 60 Subpart LLLL – Sewage Sludge Incineration Units (fugitive emissions monitoring plan)
- 40 C.F.R. 60 Subpart MMMM – SSIU EG Model Rule (control plan)
- 40 C.F.R. 60 Subpart OOOO – Crude Oil and Natural Gas Production, Transmission and Distribution (inspection and maintenance plan)
- 40 C.F.R. 60 Subpart QQQQ - Residential Hydronic Heaters and Forced-Air Furnaces (Manufacturer's quality assurance plan: note this plan is third-party certified)
- 40 C.F.R. 60 Subpart TTTT – GHGs for EGUs (monitoring plan)
- 40 C.F.R. 63 Subpart A – General NESHAPs Provisions (SSM plan)
- 40 C.F.R. 63 Subpart EEE – Haz Waste Combustors (emergency safety vent operating plan, Operations and Maintenance Plan, Feedstream analysis plan)
- 40 C.F.R. 63 Subpart HHH – Natural Gas Transmission and Storage (inspection and maintenance plan for control devices, site-specific monitoring design, data collection, and QA plan for monitoring control device)
- 40 C.F.R. 63 Subpart LLL: Portland Cement (site specific monitoring plan
- 40 C.F.R. 63 Subpart OOO: Manufacture of Amino/Phenolic Resins (monitoring plan for leak detection, gas stream flow determination plan)
- 40 C.F.R. 63 Subpart QQQ: Primary Copper Smelting (Operations and maintenance plan for each capture and control device)
- 40 C.F.R. 63 Subpart RRR: Secondary Aluminum Production (operations, maintenance and monitoring (OM&M) Plan for capture/control systems)

- 40 C.F.R. 63 Subpart TTT: Primary Lead Smelting (corrective action plan)
- 40 C.F.R. 63 Subpart VVV: POTWs (inspection and monitoring plan to comply with the standard)
- 40 C.F.R. 63 Subpart XXX: Ferroalloys Production (process fugitive ventilation design plan, outdoor fugitive dust plan, site-specific monitoring plan for CMS)
- 40 C.F.R. 63 Subpart GGGG: Solvent Extraction for Vegetable Oil Production (plan for demonstrating compliance)
- 40 C.F.R. 63 Subpart HHHH: Wet-formed Fiberglass Mat Production (OM&M Plan, performance evaluation plan)
- 40 C.F.R. 63 Subpart IIII: Surface Coating of Automobile and Light Duty Trucks (work practice plan to minimize HAP emissions)
- 40 C.F.R. 63 JJJJ: Paper and Other Web Coating (site-specific monitoring plan for capture system and control device; inspection and maintenance plan for catalytic oxidizer)
- 40 C.F.R. 63 Subpart KKKK: Surface Coating of Metal Cans (Work practice plan; inspection and maintenance plan for catalytic oxidizer)
- 40 C.F.R. 63 Subpart MMMM: Surface Coating of Miscellaneous Metal Parts and Products (work practice plan, site-specific inspection and maintenance plan for catalytic oxidizer)
- 40 C.F.R. 63 Subpart NNNN: Surface Coating of Large Appliances (work practice plan, site-specific inspection and maintenance plan for catalytic oxidizer)
- 40 C.F.R. 63 Subpart OOOO: Printing, Coating, and Dyeing of Fabrics and Other Textiles (work practice plan, sampling plan, and site-specific inspection and maintenance plan for catalytic oxidize, capture system monitoring plan)
- 40 C.F.R. 63 Subpart PPPP: Surface Coating of Plastic Parts and Products (work practice plan, site-specific inspection and maintenance plan for catalytic oxidizer)
- 40 C.F.R. 63 Subpart QQQQ: Surface Coating Wood Building Products (work practice plan, site-specific inspection and maintenance plan for catalytic oxidizer)
- 40 C.F.R. 63 Subpart RRRR: Surface Coating of Metal Furniture (work practice plan, site-specific inspection and maintenance plan for catalytic oxidizer)
- 40 C.F.R. 63 Subpart SSSS: Surface Coating of Metal Coil (capture system monitoring plan, site-specific inspection and maintenance plan for catalytic oxidizer)
- 40 C.F.R. 63 Subpart TTTT: Leather finishing (Compliance demonstration plan)
- 40 C.F.R. 63 Subpart UUUU: Cellulose Products (site specific monitoring plan for CMS)
- 40 C.F.R. 63 Subpart VVVV: Boat Manufacturing (implementation plan for open molding operations)
- 40 C.F.R. 63 Subpart ZZZZ: Stationary RICE (site-specific monitoring plan for CPMS, maintenance plan)
- 40 C.F.R. 63 Subpart FFFFF: Integrated Iron and Steel (Operations and maintenance plan,63.7834)
- 40 C.F.R. 63 Subpart JJJJJ : Brick and Structural Clay Products Manufacturing (Operation, Maintenance and Monitoring Plan)
- 40 C.F.R. 63 Subpart KKKKK: Clay Ceramics Manufacturing (Operation, Maintenance and Monitoring (OM&M) Plan)
- 40 C.F.R. 63 Subpart LLLLL: Asphalt Processing and Roofing Manufacturing (site-specific monitoring plan)
- 40 C.F.R. Subpart PPPPP: Engine Test Cells (inspection and maintenance plan)
- 40 C.F.R. 63 Subpart SSSSS: Refractory Products Manufacturing (OM&M Plan)
- 40 C.F.R. 63 Subpart TTTTT: Primary Magnesium Refining (operations and maintenance plan)

- 40 C.F.R. 63 Subpart UUUUU: Coal and Oil-fired EGUs (site specific monitoring plan 63.10000(d))
- 40 C.F.R. 63 Subpart BBBBBB: Gasoline Distribution bulk terminals, plants, and pipeline facilities (monitoring and inspection plan)
- 40 C.F.R. 63 Subpart QQQQQQ: Wood preserving area sources (management practice plan)
- 40C.F.R. 63 Subpart VVVVVV: Chemical Manufacturing area sources (monitoring plan, includes O&M for control device)
- 40 C.F.R. 63 YYYYYY: Ferroalloys Production facilities for area sources (site-specific monitoring plan)
- 40 C.F.R. 63 AAAAAAA: Asphalt Processing and roofing manufacturing area sources (site specific monitoring plan)

Despite the numerous regulatory precedents noted above, should EPA decide to maintain the requirement that state agencies approve design plans and revisions, we strongly recommend that the Agency incorporate language that provides for automatic approval of plans should a state agency fail to approve or disapprove a plan or revision in writing within 90 days. A precedential example can be found at 40 C.F.R. 63 Subpart MMM Pesticide Active Ingredient Production, which provides the Agency 90 days to approve or disapprove a "precompliance plan" before it is deemed approved.

We Strongly Support the EPA's Proposed Definition of Landfill Gas Treatment Systems, but Oppose Proposed Agency Approval of Treatment Plans

We support the Agency's proposed definition of landfill gas, treatment system and believe it supports and promotes projects for beneficial use of landfill gas. However, we oppose the proposal to require agency approval of the treatment system, monitoring plan as part of the GCCS Design Plan. The requirement would create a new and unwarranted burden for the agencies, especially since the treatment systems are site-specific, tailored to the end user specifications, and highly technical.

The Agency proposal is inconsistent with the federal rules listed above, which merely require copies (of management, monitoring or operating plans) be submitted to the agency or maintained on site for agency inspection.

The landfill gas, treatment systems are not subject to emission limits or continuous emissions monitoring, yet EPA proposes to require agency approval, which is more stringent than what EPA has required for sources with actual HAP emission limits and continuous emissions monitoring requirements. We recommend EPA finalize a requirement to prepare a treatment system, monitoring plan and maintain a copy on site for agency inspection as has been promulgated in so many other NSPS and NESHAP rules.

Peer Reviewed Data Show Landfill Gas Collection Efficiencies Ranging from 75 Percent to Over 95 Percent are Defensible

In response to the draft NSPS for landfills, the EPA received comments regarding the collection efficiency of GCCSs. Collection efficiency is an important factor used in calculating the emissions of NMOCs, volatile organic compounds (VOCs), and greenhouse gases (GHG) from landfills. Docketed comments on the proposed NSPS/EG rules (see EPA-HQ-OAR-2014- 0451 and EPA-HQ-OAR-2003-0215) mention collection efficiency at landfills is lower than recent data suggest. Specifically collection efficiencies could be as low as 20 percent (Sierra Club), or 35 percent (ERC, Covanta).

We have reviewed these comments and determined that they do not provide a representative picture of the collection efficiency seen at most landfills operating with current industry state-of-the-practice systems and procedures, specifically those used for compliance with the NSPS/EG.

Inadequacy of Cited Studies

The studies cited by the Sierra Club, ERC, and Covanta do not support claims that typical methane capture is as low as 20 or 35 percent. The studies are not representative of collection systems operated in compliance with the current and proposed MSW Landfill NSPS or EG rules.

Sierra Club Sources

The Sierra Club letter suggests that lifetime LFG collection rates are as low as 20 percent. They reference the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (FAR), which states, "Some sites may have less efficient or only partial gas extraction systems and there are fugitive emissions from landfilled waste prior to and after the implementation of active gas extraction; thus estimates of 'lifetime' recovery efficiencies may be as low as 20%." However, it is clear in the FAR that the 20 percent lifetime recovery rate is not referring to a NSPS compliant system. The FAR estimates collection efficiencies across a broad range of landfills worldwide from highly developed countries with stringent landfill standards (e.g., the U.S.) and far less developed countries with no sanitary landfills or landfill regulatory standards.

The Sierra Club also cites comments from Hans Oonk in the "Expert Review of First Order Draft of Waste Chapter to IPCCS Fourth Assessment Report"; however, his comments confirm that the low end of the gas capture range is not comparable to the collection efficiency achieved at landfills regulated under the current NSPS. He evaluated performance of gas collection systems that were installed at Dutch landfills, not for regulatory purposes, but only to recover gas for energy. Hans Oonk concluded that LFG collection for energy recovery coupled with the requirement to flare additional LFG is a highly effective option for controlling LFG emissions. This hybrid energy and flare system is the industry standard throughout the United States.

Furthermore, lifetime emissions of 80 percent of the gas from a landfill as posited by Covanta, ERC and Sierra Club would almost certainly make compliance with the NSPS/EG impossible. Such high emission rates would result in methane detections during required surface monitoring, and in turn requiring corrective action and expansion of the GCCS to lower surface emissions. Even absent the regulatory requirements for monitoring, the emissions would likely result in significant odors and complaints to local agencies.

The Sierra Club letter claims, "no gas collection can be functional until later when the cell is full and low permeable [sic] final cover is installed." In fact, hundreds of landfills have placed waste in areas with existing gas collection. While this practice may require gas systems to undergo repair, the Sierra Club's claims that "gas collection is also not functional prior to the installation of the final cover," is simply wrong, and lacks a fundamental understanding of how GCCSs are design, installed, operated, and expanded as landfills grow.

The 20 percent recovery value cited in these comments is not representative of U.S. landfills. It may be representative of the average of unregulated landfills worldwide as part of the low end of the range of collection efficiencies, but federal and state landfill requirements results in significantly higher collection efficiency rates at U.S. landfills.

Covanta and ERC Sources

The Covanta and ERC letter cites five sources for the range of collection efficiencies, including:

1. Environmental Commissioner of Ontario, EcoIssues: GHG11 Landfill Methane, http://ecoissues.ca/GHG11_Landfill_Methane
2. Fischedick M. et al. (2014) Climate Change 2014: Mitigation of Climate Change, Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
3. Levis, J., M.A. Barlaz (2014) Landfill Gas Monte Carlo Model Documentation and Results,
4. CalRecycle 2012, Review of Waste-to-Energy and Avoided Landfill Methane Emissions.
5. Documentation for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)

We have reviewed each of the cited sources for its appropriateness and representativeness for determining the collection efficiency of landfills in the United States subject to the NSPS/EG.

The first of these citations is a website for the Environmental Commissioner of Ontario (ECO). The ECO cites some studies of LFG collection efficiency and concludes that the default collection efficiency of 75 percent used by the EPA and others is overstated (note: landfills in Canada are not subject to the more stringent requirements of the NSPS/EG). However, the ECO also notes that the IPCC states that LFG collection could be above 90 percent. We note that the comments by Sierra Club, ERC and Covanta omitted the upper end of the range of landfill collection efficiencies cited by the same sources they reference.

The second source (Fischedick M. et al.) states that methane collection efficiencies range from 50 percent to 95 percent. The low collection efficiency rate of 50 percent is appropriate for some landfill collection systems that are not designed for compliance with the NSPS/EG, but are operated to achieve odor control or mitigate LFG migration. However, this type of system is typically found at small or closed landfills that account for a relatively small amount of GHG emissions, and where a comprehensive GCCS would be cost prohibitive.

The third citation (Levis and Barlaz) uses models to analyze methane recovery from different waste types under varied landfilling conditions. While the study indicated that over 80 percent of methane could be emitted, this low methane recovery rate applied to only one waste type (grass clippings), which is a rapidly degrading waste disposed in a bioreactor landfill. Further, the 80 percent emission rate is a worst-case, lifecycle scenario, in a modeled situation with delayed collection. Overall, the methane recovery rate for landfills in the model scenarios for landfills receiving more than 110 centimeters of precipitation per year were greater than 60 percent, and greater than 70 percent for landfills receiving less than 110 centimeters of precipitation per year.

The fourth citation (CalRecycle) is a study of a single landfill in California, which was subject to neither the federal NSPS/EG nor the California AB 32 Landfill Methane Rule (LMR). It is therefore inappropriate to apply conclusions from this single site study to sites complying with NSPS and the LMR. In fact, quite the opposite, this study provides support for why the NSPS/EG rule can be effective at reducing LFG emissions as compared to unregulated conditions.

The fifth citation (WARM guidance) draws on some of the same work as the Levis and Barlaz study discussed above. The WARM guidance determined that better than 50 percent LFG recovery was

typical for the national average for most waste types with yard trimmings being the exception. This value in the WARM guidance does not support assertions of a LFG recovery rate as low as 35 percent being representative. The "typical" and "aggressive gas collection" scenarios yield far greater collection efficiencies.

The Covanta and ERC letters also cite *Comparison of First-Order-Decay Modeled and Actual Field Measured Municipal Solid Waste Landfill Methane Data* (Amini, Reinhard, and Niskanen, 2013, Waste Management Vol. 33). This study found that the first-order-decay (FOD) model used to model landfill emissions can underestimate methane generation. However, FOD modeling for GHG emission calculations is frequently inaccurate, providing methane generation estimates that are both too high and too low, depending on the landfill. Furthermore, the landfills evaluated in the study are Danish, and results may not be representative of either the typical waste stream in the U.S. or landfill operations subject to U.S. regulatory requirements.

Available Collection Efficiency Data

The document entitled *Current MSW Industry Position and State-of-the-Practice on LFG Collection Efficiency, Methane Oxidation, and Carbon Sequestration in Landfills* (SWICS, 2009) was developed for EPA and reviewed seven studies of LFG collection efficiency. The analysis distinguished between study data from landfills with collection systems and cover practices compliant with the NSPS/EG rules, and data from landfills not meeting those regulatory standards. Not surprisingly, collection efficiencies were generally lower in non-compliant landfills than collection efficiencies at NSPS-compliant landfills. The SWICS study concluded that the most important factors affecting collection efficiency were cover type and extent of GCCS installation. These conclusions and an approach for estimating collection efficiency based on selected cover types and scope of GCCS installation was adopted with only minor modifications by the EPA for landfills reporting under the federal Mandatory Reporting Rule for GHG (GHGRP) (40 C.F.R. Part 98, Subpart HH).

A more recent study, *The Estimated 100-Year Collection Efficiency for U.S. Landfills* (Stege, A, Proceedings of 2013 SWANA Landfill Gas Conference), reviewed typical landfill operating practices throughout the U.S. The study compiled data from the EPA's Landfill Methane Outreach Program (LMOP) and grouped landfills by owner/operator -- large private, small private, public, and location – with those operating in the California South Coast Air Quality Management District (SCAQMD) and Bay Area Air Quality Management District (BAAQMD) separated due to their more stringent regulatory requirements. The study found that the 100-year LFG collection efficiency for typical landfills across the country was in excess of 80 percent.

In addition to the SWICS and Stege studies, the most recent direct measurement studies indicate that collection and control efficiencies are higher than the assumptions used in FOD models (De La Cruz et al., 2015 draft in final EPA review) (Walker et al., 2014) (Shan et al., 2013) (Green et al., 2012) (Goldsmith et al., 2012) (Chanton et al., 2011) (Green et al., 2009)). Direct measurement studies have also shown that inventory models used by regulators significantly over-estimate landfill methane emissions, as summarized below:

- (Shan et al., 2013) determined collection efficiencies of 91% to >99% based on statistically representative flux chamber measurements at four large California Landfills.

- (Walker et al., 2014) applied direct measurement of methane emissions and oxidation from (Goldsmith et al., 2012) for five California Landfills, four with Mediterranean climates and one with an arid desert climate. Control efficiency for the five landfills ranged from 83-88%. The effects of coverage of the landfill gas collection system and relative size of the working face and daily cover areas was analyzed and negligible.

- (De La Cuz et al., 2015) compared direct measurement of methane emissions from a humid landfill located in Southeastern U.S. with waste aged less than three years to modeled emissions and determined the FOD models predicted 4-17 times high emission rates than measured.

- Mønster et. al. (2015) showed that for 15 Danish landfills, model-predicted emissions were on an average, a factor of 5 greater than the measured emissions.

- (Green et al., 2012) compared direct measurement of four closed landfills without gas collection and found that the measured emissions were only 33%, 12%, 44%, and 17% of the emission rate predicted by the GHGRP (EPA MRR in table below). The corresponding over-prediction of models was by factors of 2.3 to 8.3 greater than the measured emissions. The SWICS methodology (SCS, 2009) which applies a 30% oxidation rate for soil mixtures likewise predicted much lower emission rates than the GHGRP:

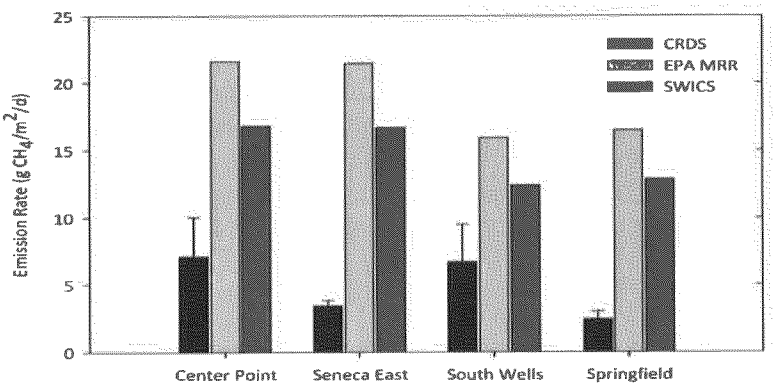


Figure 1. Comparison of Methane Emission Results from CRDS Measurements and Models (error bars represent 1sd)

- Two southern California Landfills were evaluated by research aircraft taking methane measurements in (Peischl, J. et al., 2013). Peischl et al. applied the measured emission rate to each site's footprint and methane collection and combustion data to estimate collection efficiencies of 73% and 77%. Applying an oxidation factor of 38 percent results in control efficiencies of 77% and 80%. These results are considered a lower bound by the researchers because of limitations in accounting for other sources of methane and potential atmospheric effects. Note that (Shan et al., 2013) estimated collection efficiencies at one of these landfills by two different methods of 93.1% and 95.9%.

- A study of three landfills (humid climate located in Southeastern U.S.) measured collection efficiency (ignoring oxidation) based on EPA Method OTM-10 of 73% (70/77), 80.5% (77/89), and 38% (Arcadis, 2012). Waste Management (Kelly et al., 2012) raised the following significant issues with the results from Landfill B (site with 38%):

- Bias toward high methane based on location with respect to an adjacent source (hog farm) and location downwind of LFG wells;

- The landfill installed a new gas collection system shortly after the measurements, so GCCS in place at time of study was not representative of modern landfills with systems operating in accordance with NSPS/EG; and

- There was only one measurement season (summer) as contrasted with the other two landfills, which were separately measured over two seasons.

The results of direct measurement studies refute docketed comments (EPA-HQ-OAR-2014- 0451 and EPA-HQ-OAR-2003-0215) that LFG collection efficiencies are much lower (about 35%-70% over the life of the landfill) than default values in inventory models used by regulatory agencies. Further, they refute comments that claim models of landfill gas emissions often result in significant under-estimation of emissions. There is neither a technical basis, nor direct measurement studies to underpin the claims that typical collection efficiencies are only 35-70%. Furthermore, methane oxidation was not incorporated into the study underpinning these comments, and should be for a more accurate assessment of landfill emissions.

Consistency with Recent EPA Regulations

As noted above, the EPA adopted a modified version of the SWICS methodology for calculating site-wide LFG collection efficiency at landfills under the GHGRP. That methodology uses a collection efficiency of 60 percent for area with daily cover, 75 percent for areas with intermediate cover, 95 percent for areas with final cover, and zero (0) for areas without gas collection. The collection efficiencies already adopted by EPA in federal regulation are significantly higher than the collection efficiencies of 20 and 35 percent advanced by the Sierra Club, Covanta, and ERC.

Direct Measurement

Finally, Covanta suggested in comments that direct measurement of landfill emissions should be incorporated as a requirement in the final standards. The comment letter notes several studies that have used remote sensing technology such as Vertical Radial Plume Mapping (VRPM) and Other Test Method 10 (OTM-10) to measure landfill area emissions.

While the industry agrees that significant fieldwork has been conducted using remote sensing technology, the Covanta comments minimize the challenges in broadly using these methodologies at landfills. For example, the Covanta-funded study, *Quantifying Methane Abatement Efficiency at Three Municipal Solid Waste Landfills* (EPA/600/R-11/033, January 2012) characterizes OTM-10 as a 'breakthrough in technology" that has "resulted in the ability to more accurately quantify" emissions, but fails to note that the technology requires extensive preparation and characterization of the topography and meteorology at subject landfills. Covanta also references the study to argue for assuming lower LFG collection efficiency rates, although the study does not provide sufficient support.

Waste Management (WM) provided comments to EPA's Office of Research & Development on the study in a letter dated September 28, 2012 (Kelly et al., 2012). The letter summarized key technical concerns including first, that the limited scope of the research, summarizing five measurement

campaigns at only three southeastern landfills, does not provide a sound basis for the document's broad policy conclusions and proposed next steps. Second, WM voiced significant scientific and technical concerns about the measurement methods and physical conditions at the sites, which call into question the validity of the reported measurements.

At EPA's request, WM in a letter to the Office of Air Quality, Planning and Standards, assessed the appropriateness of developing regulatory requirements for the use of the OTM-10 direct measurement technique (August 23, 2011). WM described key challenges in using the technique including that OTM 10 measurements can assess only 5 to 20 percent of the total landfill surface. This makes the technique subject to criticism regarding its spatial representativeness in determining emission rates. WM also described the difficulty in the set-up and use of the TDL equipment due to the complex topography associated with landfills and the strong influence weather (e.g., wind direction and speed, precipitation, barometric pressure) plays on the ability to obtain usable TDL readings. The large source size, heterogeneous source area, and interference from proximate or distant sources of emissions (from an adjacent landfill cell outside the measurement area or a wholly separate site) can create very significant uncertainties in measuring methane emissions at a landfill. Additionally, the process of direct measurement is expensive and may prove cost-prohibitive for widespread practical application.

References

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2. Environmental Commissioner of Ontario, EcoIssues: GHG11 Landfill Methane Webpage, http://ecoissues.ca/GHG11_Landfill_Methane, accessed January 18, 2016.
3. Fischedick M. et al. (2014) Industry. In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change
4. Levis, J., M.A. Barlaz (2014) Landfill Gas Monte Carlo Model Documentation and Results
5. CalRecycle (2012) CalRecycle Review of Waste-to-Energy and Avoided Landfill Methane Emissions
6. Documentation for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)
7. Amini, H.R., D. Reinhart, A. Niskanen (2013) Comparison Of First-Order-Decay Modeled And Actual Field Measured Municipal Solid Waste Landfill Methane Data, Waste Management 33.
8. California Air Resources Board (CARB 2009), Staff Report: Initial Statement of Reasons for the Proposed Regulation to Reduce Methane Emissions from Municipal Solid Waste Landfills, Appendix D: Evaluation of Landfill Gas Collection Efficiency, May 2009.
9. Alex Stege, Estimated 100-Year Collection Efficiency for U.S. Landfills.Proceedings 2013 SWANA LFG Symposium
10. Shan, J., Iacoboni, M., and Ferrante, R. (2013); "Greenhouse Gas Emissions from three Southern California Landfill Sites", Solid Waste Association of North America (SWANA) 36th Annual Landfill Gas Symposium, Las Vegas, NV.
11. Walker, S.D., Green, R.B., and Sullivan, P.S. (June 2014); California Landfill Methane Control Efficiency Based on Recent Direct Measurement Studies; Global Waste Symposium 2014, Orlando, Florida

12. De La Cruz, F., Green, R., Hater, G., Chanton, J., Thoma, E., Harvey, T., Barlaz, M. (in final EPA review, 2015); Landfill Methane Emissions: A Comparison of Field Measurement to Gas Production Models.
13. MØnster J., Samuelsson, J., Kjeldsen, P., Scheutz, C. (2015); Quantification of Methane Emissions from 15 Danish Landfills Using the Mobile Tracer Dispersion Method. *Waste Manage.* 2015, *35* (0), 177-186
14. Green, R., Swan, N., Thoma, E., Footer, T., Chanton, J., Hater, G.; (2012); Measured and Modeled Methane Emissions at Closed MSW Landfills Without Gas Collection; Proceedings of the Global Waste Management Symposium, San Antonio, Texas.
15. Peischl, J. et al. (2013); Quantifying Sources of Methane Using Light Alkanes in the Los Angeles Basin, Journal of Geophysical Research: Atmospheres, Vol. 118, 4974-4990.
16. ARCADIS U.S., Inc. (January 2012); Final Report- EPA/600/R-11/033, Quantifying Methane Abatement Efficiency at Three Municipal Solid Waste Landfills, Prepared for: Susan A. Thorneloe U.S. Environmental Protection Agency Triangle Park, NC 27711, Office of Research and Development National Risk Management Research Laboratory, Air Pollution Prevention and Control Division Research.
17. Kelly, K., and Van Kolken Banister, A. (2012); September 28, 2012 comment letter to Richard Shores, U.S. Environmental Protection Agency on "Quantifying Methane Abatement Efficiency at Three MSW Landfills, EPA/600/R-11/033.

Shorter Lag Times for Wet Landfills Are Not Warranted or Justified

We are concerned that EPA is continuing to target "wet" landfills for additional requirements under the proposed NSPS/EG. In our comments on the ANPRM in 2014, we explained why EPA should not reduce the initial lag times for GCCS installation at landfills located in wet climates, landfills that recirculate leachate, or landfills that add other liquids to accelerate waste decomposition. We highlighted ambiguity in the definition of wet landfills, the oversimplification that results from definitions that rely primarily on measured precipitation and leachate levels, and the potential overlap in requirements between the Landfill NSPS/EG and the Subpart AAAA NESHAP.

We believe EPA's proposed definition of wet landfills focuses to narrowly on precipitation and leachate variables, and fails to consider the many other factors that influence moisture content in landfills. Our comments noted that precipitation is not well correlated with landfill moisture levels. Other factors, like waste acceptance rates, the amount of moisture in the disposed waste, cell size, cover type, and cover timing also have a significant impact on landfill moisture levels. We strongly urge EPA to avoid simplistic definitions that fail to account for the complexity of the landfill environment. EPA should not define landfills as "wet" based only on precipitation of over 40 inches per year. EPA should base its approach on sound science and analysis.

Recent research efforts conducted by EPA, in cooperation with solid waste industry and academic researchers (De la Cruz, F.B., Green, R., Hater, G., Chanton, J., Thoma, E., Harvey, T., and Barlaz, M., *Comparison of Field Measurements to Methane Emissions Models at a New Landfill*) at a landfill located in a wet climate (Southeastern U.S.) indicate that FOD models over-predict emissions from waste that is less than four years old by at least a factor of four. The study, to be submitted to the *Journal of Environmental Science and Technology*, compared field measurements (tracer correlation and eddy covariance) to FOD models using a k value of roughly 0.05. The study authors concluded

that additional field data on methane production and emissions is necessary to establish a path forward to updating the model parameters and methodology for estimating emissions.

We are also concerned that EPA has failed to provide any discussion of the cost and cost effectiveness of shorter lag time requirements. From our review of other proposed changes to the NSPS and EG, we have concluded that the more stringent requirements come with significantly higher costs. EPA should not finalize shorter lag times at wet landfills without providing additional information to the regulated community and other stakeholders.

Issues Associated with Applicability and Effectiveness Dates, and Implementation Issues

EPA has proposed to change the applicability date from 5/30/1991 to 7/14/2014 for new or modified sources. With this approach, very few sites will be initially subject to the proposed NSPS (Subpart XXX) and majority of sites will be subject to the proposed EG rule (Subpart Cf).

EPA has not followed a consistent approach historically in regards to updating NSPS rules. In some cases, EPA has updated the existing NSPS rule and retained existing applicability dates (40 C.F.R. 60 Subpart Eb[1], 40 C.F.R. 60 Subpart F). In other cases, EPA has retained the existing NSPS and applicability date (40 C.F.R. Subpart G: August 17, 1971 – October 14, 2011) and created a new NSPS rule and applicability dates for affected sources (40 C.F.R. Subpart Ga: after October 2011). EPA has never created a new EG rule to replace an existing EG rule. Further, EPA has updated EG rules but has not changed the applicability date (40 C.F.R. 60 Subpart Cb[2]).

EPA has now aligned the rule requirements and rulemaking schedule for the NSPS and the EG so there is no substantive difference in requirements between the rules. If EPA were to retain the 1991 applicability date for NSPS sites, then the proposed EG (Subpart Cf), including the Closed Landfill subcategory, could be incorporated in the NSPS (Subpart XXX) and EPA could retain the existing EG, (Subpart Cc) for sites that did not open or modify (expand the landfill) since 1991. This approach would significantly reduce regulatory burden for state and local agencies (they would not be required to prepare state plans or revise existing state rules) and EPA would not be obligated to prepare, issue and implement a Federal Plan.

Effective Date of Final NSPS Rule and Compliance Dates

There is no issue with the effective date of the NSPS rule as long as EPA includes clear and reasonable compliance timelines for submitting new or revised reports. The proposed NSPS rule includes a 90-day compliance timeframe for submitting design capacity reports and NMOC emission rate reports, which is consistent with WWW. The rule continues to assume these are first time reports and does not address whether sites already subject to NSPS WWW requirements must re-submit reports.

Design Capacity Reports

Sites that commenced operation prior to date of the final NSPS XXX rule (and submitted design capacity reports per NSPS WWW/EG Cc requirements) should be exempt from re-submitting design capacity reports. The design capacity report is required only to determine whether a site is subject to

[1] FEDERAL REGISTER Vol. 71, No. 90 May 10, 2006 pp. 27324-27348
[2] Ibid

the NSPS/EG rule and Title V requirements. This report is not relevant for sites where NSPS/EG and Title V requirements have already been triggered by an exceedance of the design capacity exemption. Furthermore, preparing and submitting the report would add unnecessary burden to the sites and regulatory agencies.

NMOC Emission Rate Reports

Sites that installed GCCS under NSPS WWW/EG Cc requirements should be exempt from re-submitting the NMOC emission rate report. The emission rate report is required only to determine when the site must install a gas system to control NMOC emissions. This report is not relevant for landfills with existing NSPS/EG-required GCCSs and preparation and submittal would add unnecessary burden to the sites and regulatory agencies.

For sites that are currently subject to NSPS WWW but have not triggered NMOC threshold requiring GCCS installation, EPA should continue to require annual or 5-year periodic reports and allow sites to use valid test data for the reports. The rule should not require new Tier 2 or Tier 3 testing if the test data and supporting information is still valid. Sites should have the option to complete additional Tier 2 or Tier 3 testing. Allowing sources to use previous emissions test results to demonstrate compliance with the NMOC threshold, if revised, is consistent with federal rules (40 C.F.R. 60 Subpart Ec) FR Vol. 74, No. 192 October 6, 2009 pp. 51368-51418

GCCS Design Plans and Gas Treatment System Monitoring Plans

Sites that installed GCCS under NSPS WWW/EG Cc requirements should be exempt from re-submitting the GCCS Design Plan. The Design Plan is required only to present a conceptual design of the GCCS that was used as basis to install the existing GCCS; therefore this report is not relevant. Preparation and re-submittal would add unnecessary burden to the sites and regulatory agencies.

EPA offers two criteria for when an affected source must update and submit its design plan: 1) within 90 days of expanding operations to an area not previously covered by the design plan; and 2) prior to installing or expanding GCCS in a manner other than one described in a previously approved design plan. The criteria and timeframes appear reasonable; however, we again urge EPA to provide alternatives to agency approval of Design Plans given the vast number of plans that have received no formal agency approval, which results in compliance uncertainty. The existing rules already require WWW and EG sites to report expansions made to the GCCS on semi-annual basis and to update the as-built maps that reflect current GCCS operations.

Currently, there is no compliance timeframe proposed in NSPS Subpart XXX for submitting a gas treatment, system monitoring plan. As this is a new proposed requirement, we are concerned that the proposed rule offers no transitional compliance period for existing sites with LFGTE projects that trigger Subpart XXX applicability upon expansion or modification. We recommend EPA allow for at least 120 days to prepare a treatment system monitoring plan. We again do not recommend EPA require agency approval of the plans, as further described in previous comments and below.

New Monitoring and Recordkeeping Requirements

If EPA finalizes any changes to monitoring and/or recordkeeping requirements in the NSPS, sites that installed GCCS under WWW requirements will require lead time to install new equipment (where applicable), develop/implement new processes and train staff/third party contractors before the site can comply with the new requirements. It may not be possible for a site to comply immediately upon the publication date of the final NSPS rule nor should EPA expect a site to immediately comply where monitoring and/or recordkeeping requirements are revised. For example, changes to SEM

requirements should be implemented in the subsequent calendar quarter after which the rules are published. Assuming the NSPS rule is published in July 2016, a site would implement any new SEM and recordkeeping requirements during the fourth quarter.

The undersigned organizations appreciate your consideration of these supplemental comments and hope the Agency finds them useful as you finalize the MSW Landfill NSPS and EG rules. Please feel free to reach out to us if you have any questions. We look forward to continuing to work with you as we prepare to implement the new rules.

Sincerely,

Waste Management
Republic Services
Advanced Disposal
SCS Engineers
Weaver Consulting Group
Cornerstone Environmental Group
National Waste & Recycling Association
Solid Waste Association of North America
The Sanitation Districts of the County of Los Angeles

From: Dominguez, Alexander
Location: Location: 1200 Pennsylvania Avenue, NW (North) - Room 3530 WJCN
Importance: Normal
Subject: National Association of Manufacturers
Start Date/Time: Mon 7/10/2017 6:00:00 PM
End Date/Time: Mon 7/10/2017 7:00:00 PM

Location: 1200 Pennsylvania Avenue, NW (North) - Room 3530 WJCN

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.

EPA Contact: For an escort from Security to the meeting call 202-564-1016 or 202-578-5985

Request:

Regulatory priorities – Details to follow

Attendees:

To follow – roughly 8 from NAM

Contact:

Rachel Jones

Director, Energy and Resources Policy

National Association of Manufacturers

RJones@nam.org

(202) 637-3175

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Canadian Energy
Start Date/Time: Tue 4/4/2017 3:00:00 PM
End Date/Time: Tue 4/4/2017 3:30:00 PM

Would you set this meeting up from Samantha's calendar? Thank you.

Topic: Meeting with Canadian Energy

Date: Tuesday, 4/4

Time: 11:00 – 11:30 a.m.

Location: 3500 WJC

Required: Daugherty, Casie Casie.Daugherty@prime-policy.com; Gabe.Rozsa@prime-policy.com

Cc: Kime, Robin <Kime.Robin@epa.gov>; Germann, Sandy Germann.Sandy@epa.gov;

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

From: Rozsa, Gabe [mailto:Gabe.Rozsa@prime-policy.com]
Sent: Wednesday, March 8, 2017 3:31 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Canadian Energy

Ryan,

I wanted to ask for your advice on whether a meeting with the Administrator or his senior staff might be possible to talk about North American energy integration and streamlining environmental reviews for cross border energy projects. The meeting would be on either April 4 or 5 with a client who is a leader in the oil sands region of Alberta. As the Trump Administration and the Congress rethink the US energy policy, I know integration of North American energy, including the role of Canadian oil in helping to meet domestic needs and the role of pipelines like KXL is again be on the agenda. Although KXL finally is on track for approval, there remain many regulatory issues involved and likely other pipelines issues in the future raising issues to consider. We represent a group of Canadian oil companies that are drilling for oil in Alberta. Bill McCaffrey, the CEO of MEG Energy and the leading force behind our client, the In situ Oil Sands Alliance (IOSA), will be in DC for meetings on April 4 and 5 and I was hoping to schedule time with you or someone you might recommend at EPA to discuss next steps toward better integration and North American energy independence. MEG and IOSA have done some pioneering work in the in situ process which is estimated to represent 80% of the available Canadian oil sands resource. A little biographically information about Bill can be found here which summarizes an award he recently received for his dynamic leadership in energy issues including innovative development and transport of the resource. I also expect a few other executives from MEG and/or IOSA on the trip.

Contact:

Gabe Rozsa

Managing Director

1110 Vermont Avenue, NW | Suite 1000 | Washington, DC 20005

202 530 4843 | Fax: 202 530 4800 | Cell: 202 701 7710

www.prime-policy.com

From: Dominguez, Alexander
Location: Location: 1200 Pennsylvania Avenue, NW (North) - Room 3528
Importance: Normal
Subject: Farm Bureau /EPA
Start Date/Time: Thur 6/29/2017 7:30:00 PM
End Date/Time: Thur 6/29/2017 8:30:00 PM

Location: 1200 Pennsylvania Avenue, NW (North) - Room 3528 WJCN

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station.

EPA Contact: For an escort from Security to the meeting call 202-564-1016 or 202-578-5985

Request:

To discuss WOTUS Step #2

Attendees:

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American Farm Bureau Federation

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Thomas Ward

Vice President, Legal Advocacy

National Association of Home Builders

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tward@nahb.org

From: Inge, Carolyn
Location: 3513A
Importance: Normal
Subject: Paul Bailey with ACCCE
Start Date/Time: Thur 3/30/2017 2:00:00 PM
End Date/Time: Thur 3/30/2017 2:20:00 PM

Notes:

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: Robin Kime (202) 564-6587 or the main OP line (202) 564-4332

> On Mar 26, 2017, at 7:17 AM, Dravis, Samantha <dravis.samantha@epa.gov> wrote:

>

> We have a big day Monday/Tuesday so it would have to be after that, probably Thursday.

>

> Sent from my iPhone

>

>> On Mar 24, 2017, at 4:18 PM, Sechrist, Erica Ann <esechrist@orrick.com> wrote:

>>

>> Hi Samantha,

>> Paul Bailey with ACCCE was wondering if you have any time to meet next week. He's pretty open except Wednesday afternoon.

>>

>> Thanks,

>> Erica

>>

>> Sent from my iPhone

>>

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From: Dominguez, Alexander
Location: 1200 Pennsylvania Avenue, NW (North) Please call 202-564-3164 (Room 3528)
Importance: Normal
Subject: Alliance for Vehicle Efficiency
Start Date/Time: Thur 6/22/2017 8:00:00 PM
End Date/Time: Thur 6/22/2017 8:30:00 PM

Make-up from May 23

Attendees:

- Jeff Breneman, Executive Director, Alliance for Vehicle Efficiency
- Lee Janger, Director for Legislative and Regulatory, Alliance for Vehicle Efficiency
- Stacey Bernards, Honeywell, Vice President for Government Relations
- Erika Nielsen, BorgWarner, Director of Global Government Affairs
- David Lancaster, BorgWarner, Senior Engineer
- David Cetola, Johnson Matthey, Director of Government Affairs
- Casey Westhoff, Umicore, Government Affairs

Discussion Topics:

- Overview of the Alliance for Vehicle Efficiency (AVE)
- The automobile supplier industry and where things are headed
- EPA's Midterm evaluation of emission standards
- AVE concerns about matters that will impact the supplier industry
- How AVE and its members can assist EPA (What type of information the auto supplier community might be able to provide EPA to assist with the rulemaking?)

Thank you again for assisting with this meeting.

-Lee

Lee J. Janger

Director, Legislative and Regulatory Affairs

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Lee@ArmitageLLC.com

From: Kime, Robin
Location: 3513A
Importance: Normal
Subject: Discussion with Mr. Ike Scott, President of Scott Bridge Co.
Start Date/Time: Wed 3/22/2017 3:30:00 PM
End Date/Time: Wed 3/22/2017 3:45:00 PM

Directions: Please use the William Jefferson Clinton **North Entrance** located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Edward Hild: Exemption of Certain Ocean Shipping Vessels from Mandatory Fuel Standards
Start Date/Time: Tue 7/11/2017 5:30:00 PM
End Date/Time: Tue 7/11/2017 6:00:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: Now that Congress has passed the FY 2017 Omnibus Appropriations bill, we have a client – Canada Steamship Lines that is very supportive of report language contained in the Senate Interior portion of the bill asking the EPA to consider exempting certain ocean shipping vessels from mandatory fuel standards that were implemented in January of 2015. We also briefly mentioned the issue to you during our meting and my colleague Terry Heubert and I would greatly appreciate the opportunity to discuss the issue in more detail with you and EPA's approach to the Senate language.

Attendees: Edward Hild, Terry Heubert (also of Buchanan Ingersoll & Rooney) and Richard Currie (Canada Steamship Lines Americas)

Contact:

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From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: Introductory Meeting with Oren Cass
Start Date/Time: Thur 7/13/2017 6:00:00 PM
End Date/Time: Thur 7/13/2017 6:30:00 PM
170102-How to Worry About Climate Change (National Affairs).pdf
170321-The Problem with Climate Catastrophizing (FA).pdf
170417-Whos the Denier Now (NR).pdf
170531-Goodbye to Paris (Commentary).pdf
170601-Well Never Have Paris (CJ).pdf
170605-Dont Apologize for Being Honest about Climate Change (NRO).pdf

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact: adamwhite.dc@gmail.com

Request: My friend and co-author, Oren Cass of the Manhattan Institute, has written far-and-away the best commentaries in recent months on climate, Paris, and the EPA. He has some advice for you on some things to consider as Administrator Pruitt structures his red-blue team approach. Specifically, he wants to urge you that one of the most valuable things you could do is to study the "baselines" that are being used to forecast potential emissions trajectories; this is a huge shortcoming of current science and is being badly mischaracterized/misused. An EPA analysis of it would be hugely valuable. I can't recommend strongly enough that you meet Oren soon Here's his bio. Some of Oren's recent commentaries in favor of reforming climate policy:

"The Problem with Climate Catastophizing" — *Foreign Affairs*, March 2017

"Who's the Deniers Now" — *National Review*, May 2017

"Goodbye to Paris: The Sin of Being Honest" — *Commentary*, May 2017

"We'll Never Have Paris: The climate change agreement was designed as a feel-good, do-nothing program" — *City Journal*, May 2017

"Don't Apologize for Being Honest about Climate Change" — *National Review*, June 2017

Debating President Trump's Withdrawal from the Paris Accord — NPR, June 2017

NATIONAL AFFAIRS

How to Worry about Climate Change

Oren Cass

"No challenge—no challenge—poses a greater threat to future generations than climate change," said President Barack Obama in his 2015 State of the Union address. Yet his own administration's best estimate for the economic cost of that challenge, if left unaddressed, totaled only 1% to 4% of annual global GDP by 2100. For comparison, while promoting the Affordable Care Act in 2009, the president's Council of Economic Advisers estimated that "genuine health care reform" could increase U.S. GDP by 8% by 2030. A 2015 report by the McKinsey Global Institute estimated that improvements in gender equality worldwide could increase global GDP by 11% by 2025. In what way, then, is the challenge of climate change "greater"?

To be sure, GDP offers a notoriously incomplete measure of human flourishing. But the real problem with assessing Obama's assertion is more fundamental: Climate change is a different *kind* of problem from health-care reform, gender equality, or almost any traditional subject of political attention and action. Its relevant effects are still decades or centuries away. Scenarios with the most extreme effects, rather than the most likely ones, provide the sense of urgency and the rationale for policy responses. Those extreme outcomes are often distant ripples from the initial effect of a warmer climate, transmitted outward through multiple steps of causation and combined with other factors to produce or amplify the damage. By the time actual impacts arrive, the time for action may have long passed. But if climate change is not a typical policy problem, how should policymakers approach it?

This is not an abstract question. As a new administration takes office, it must recalibrate from the extraordinary attention its predecessor

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lavished on the issue. Where does climate change fit in the constellation of challenges facing the nation and the world? For the administration's opponents, how much energy should go toward lamenting a shift in climate policy versus highlighting other areas of concern?

Much of the political rhetoric and policy analysis surrounding climate change starts from a premise that the challenge is truly unique, demanding unparalleled levels of focus and action. A climate-change conference could attract the United Nations' largest ever gathering of world leaders in 2015 because, as French president Francois Hollande declared at its opening, "never—truly never—have the stakes of an international meeting been so high. For the future of the planet, and the future of life, are at stake." Comparisons to World War II have become commonplace, and proponents of strong climate action deride their opponents as "deniers"—a term previously associated with refusal to acknowledge the occurrence of the Holocaust. Left-wing politicians from former vice president Al Gore to Senator Bernie Sanders to New York City mayor Bill de Blasio warn that human civilization hangs in the balance.

This framing influences policy directly. During the 2016 Democratic primaries, for instance, Senator Sanders suggested the nation's mobilization for World War II in 1941 was "exactly the kind of approach we need right now," while former senator and Secretary of State Hillary Clinton offered her plan to create a dedicated "climate map room" in the White House, akin to President Franklin Roosevelt's own map room during that same war. The mindset is reflected in the Democrats' official platform, which "commit[s] to a national mobilization, and to leading a global effort to mobilize nations to address this threat on a scale not seen since World War II." Lest the claims be taken as less than literal, the *New Republic* clarified in its headline of an article by activist Bill McKibben: "We Need to Literally Declare War on Climate Change."

Based on such dire outlooks, advocates of aggressive climate action justify their proposals under the "precautionary principle" or as "insurance," even where the measurable costs appear to far outweigh measurable benefits. They dismiss skepticism about that approach as an irrational failure to understand the scope of the problem or an excessive discounting of future damage. "If global warming took out an eye every now and then," scoffed Dan Gilbert, professor of psychology at Harvard University, "OSHA would regulate it into nonexistence."

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But the unmooring of climate change from any conventional policy framework has been rhetorical rather than reasoned. It requires justification—otherwise, the obsessive and apocalyptic politics built atop it cannot be supported. Yes, climate change is a problem. But what *kind* of problem?

Calibrating Our Worries

Climate change stands apart from typical challenges in three important respects. First, whereas most challenges are *immediate*, climate change is *forecasted*. The political process usually engages with problems as they present themselves or based on expected consequences of current events. The claim that high corporate-tax rates drive businesses overseas, or that high college tuition burdens graduates with overwhelming debt, can be tested against experience and quantified in terms of ongoing costs. Claims about climate change cannot. Scientists do strive to identify contemporary costs, but the scale of the challenge and the case for action depend on calamities yet to come—indeed, assertions that climate change will be far outside of existing experience often play a central role in the case for its significance. Yet this absence of reference points creates a double-edged uncertainty: Compared to most policy issues, the level of risk seems high but the level of confidence in predictions is low.

Second, whereas most challenges are *static*, climate change is *irreversible*. Medical errors kill more than 250,000 Americans each year, according to researchers at Johns Hopkins University. Those deaths each represent an individual tragedy and, applying the EPA's preferred estimate of $10 million per life, cost a staggering 15% of national GDP. But deaths one year have little effect on society's capacity to make future progress on the issue. Even most forecasted problems share this characteristic: If demographic trends suggest an impending shortage of nursing-home beds and politicians ignore the warnings, more capacity can still be built after the crisis hits. With climate change, by contrast, scientists warn the planet will reach a point of no return. Carbon dioxide, once emitted into the atmosphere, remains there for centuries. If temperatures rise and predicted meteorological dominos begin to fall, subsequent efforts to reduce emissions will not offer relief.

Third, whereas most challenges are *confined*, climate change is *pervasive*. The typical forecasted problem, even if irreversible, has limited reach. Population growth in the American Southwest may drive some species to extinction in the coming decades. But there, or near there, that particular

causal chain likely ends. It is constrained geographically, thematically, and in the extent of damage. Not so with climate change. Its global scope and linkages to many critical environmental and economic systems invite the conjuring of disruptions in every cranny of modern civilization.

Climate change—*forecasted*, *irreversible*, and *pervasive*—might therefore be called a "worrying problem." Here, "worrying" does not mean "concerning" (though it is that as well), but rather something tailor-made for worry. Its effects exist primarily in the imagination and have poorly defined bounds that encourage speculation; a point of no return looms. Yet the contours of those bounds and that point may become clear only after it is too late to correct course.

Other worrying problems exist. They tend to emerge where clear long-term trends in technological or social change produce concerning side effects. The obvious trajectory of growing fossil-fuel consumption, prerequisite (with current technology) to continued global industrialization, produces the climate challenge. Similarly, ever-denser urbanization coupled with ever-more-frequent travel from ever-more-remote locations produces an ever-greater risk of a global pandemic. Such a pandemic is widely forecast to occur though the timing is unknowable; it will be too late to prevent once underway, and it has the potential to cause catastrophic damage throughout society. Increasing urbanization also exposes society to both higher levels of social unrest and disruption by increasingly powerful and well-coordinated non-state actors.

Overuse of antibiotics around the world could render them useless in the face of rapidly evolving bacteria, possibly setting back medical progress against disease and infection by decades. The rising sophistication, ubiquity, and interconnectivity of financial systems threaten a global economic meltdown of the type only narrowly averted in 2008. The democratization of communications technologies has already provided fertile ground for terrorist networks to recruit, coordinate, and promote themselves. Nuclear weapons represent in some respects a quintessential worrying problem, though an oddly binary one: Their likely effects are all too well-understood; their risk remains roughly as present this year as last year as next. The issue typically attains salience only when conditions suggest risk is trending upward—as early in the Cold War, during periods of proliferation, or when leaders appear potentially willing to countenance their use.

Just as technology can provide a vector to heighten some risk, it can also pose the risk itself. For instance, many experts fear the prospect of

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faster computing hardware and more sophisticated software—ultimately yielding superhuman and potentially hostile artificial intelligence. Computer viruses, meanwhile, might someday allow their creators to commandeer the basic infrastructure of modern society. Continued advancements in nanotechnology—especially if weaponized—raise comparable fears of tools either inadvertently escaping the control of their creators or being deployed maliciously.

All these are worrying problems. All present a potential scope of damage that is at this point only hypothetical but could be almost unlimited—in part *because* it is only hypothetical. Each is plausibly foreseeable given present trends, and each would defy prevention once underway, yet for each the moment or probability of reckoning is impossible to know.

Worrying problems can also be sociological, rather than technological. Declining fertility rates coupled with extending lifespans, for instance, pose precisely *forecasted*, *irreversible*, and *pervasive* challenge to modern civilization. So too do economic and social transitions with the potential to make large swathes of the working-age male population effectively unemployable. Insofar as two-parent families are a crucial contributor to successful child-rearing, the collapse of that social norm and its compounding across generations likewise exhibits the characteristics of a worrying problem.

Those may not seem intuitively like problems similar to climate change. But imagine President Obama describing riots in Baltimore as he might describe a major hurricane strike: "While sociologists say no individual riot can be linked conclusively to the absence of two-parent families, this social unrest is exactly the type they say will become more prevalent and severe as the trend worsens." The problems may not seem as catastrophic. But that is a question of degree, not kind, and therefore one that permits relevant comparison. If one of these worrying phenomena were only to slow annual productivity growth by one-tenth of one percentage point for only one-tenth of the population, the economic impact three generations hence would be of the same magnitude which is forecast in climate-change models.

Even the sustainability of the Western welfare state itself is a worrying problem. In the United States, the federal government has tens of trillions of dollars in unfunded entitlement liabilities and a debt poised to spiral out of control if interest payments begin to swallow the national budget; most other developed economies face situations at least

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as dire. A collapse would have immeasurable economic and geopolitical implications yet may give almost no advance warning.

There is, in short, much to worry about. But while these problems all look fundamentally different from other policy challenges, by their *forecasted*, *irreversible*, and *pervasive* nature defy traditional tools of policy analysis—they stack next to each other quite cleanly. Perhaps climate change and deferred bridge maintenance require different risk-tolerance assumptions. But the thinking applied to climate change and pandemics should be similar. Perhaps it makes no sense to compare the long-term threat from water-supply disruptions with the present cost of medical errors. But water stability and family stability have much more in common.

Worrying problems demand greater focus than day-to-day political pressure might otherwise prompt, but long-term risks cannot be allowed to sap all attention away from the more routine but also more painful realities of the moment (consistent progress on the latter is every bit as important to society's long-term health). In isolation, each worrying problem can seem overwhelming. But they cannot all be the greatest challenge of future generations, or grounds for mobilization on a scale not seen since the global fight against fascism.

Each reader will likely have his own reaction to the worrying problems listed here—which genuinely qualify and which others have been overlooked; which among them is truly forecasted, irreversible, and pervasive; whether those are even the correct dimensions. But at least those are concrete and constructive discussions. The classification of problems into hierarchies, the establishment of shared assumptions built with a common vocabulary, and reasoning by analogy are all critical to determining appropriate tools of government power, the allocation of resources, and the tolerance for risk.

We should heed the well-known warning: "What worries you masters you." We need to choose and calibrate our worries with care. If, at least, climate change is a worrying problem but not the *only* one, what makes it most worrying of all?

expectations in perspective

Environmental activists have an immediate and predictable response: "because we *know* climate change is going to happen." But that conflates two very different conceptions of climate change—*expected* change and *extreme* change.

17cv01906 Sierra Club v. EPA ED_001523_00005689-00006

The scientific consensus holds that the climate is warming and human activity plays a substantial role. But there is no consensus about how much warming human activity has caused or will cause. According to the Fifth Assessment Report of the United Nations' Intergovernmental Panel on Climate Change (IPCC) in 2013, the best estimates of warming for a given increase in the atmospheric concentration of carbon dioxide range by a factor of three, a range that has grown wider in recent years. A doubling of carbon dioxide could produce a temperature increase of 1.5 degrees Celsius, or 4.5 degrees Celsius, or more likely something in between. *Expected* climate change, averaging the widely varying projections and assuming no aggressive efforts to reduce greenhouse-gas emissions, entails warming of 3 to 4 degrees Celsius by 2100.

Even focusing within that range, estimates for the expected environmental *impacts* of warming vary widely. The IPCC represents the gold standard for synthesizing scientific estimates, and, crucially, its best guesses bear little resemblance to the apocalyptic predictions often repeated by activists and politicians. For instance, the IPCC estimates that sea levels have risen by half a foot over the past century and will rise by another two feet over the current century. At the high end of the 3-to-4-degree range, it reports the impact on ecosystems will be no worse than that of the land-use changes to which human civilization already subjects the natural world.

The responsibility for translating these and other disruptions into economic costs falls to Integrated Assessment Models (IAMs). To create its "Social Cost of Carbon," the Obama administration surveyed this economic literature and focused specifically on three models whose forecasts themselves vary widely, even starting from a common level of warming. For warming of 3 to 4 degrees Celsius by 2100, the middle of the three models estimates an annual cost of 1% to 3% of GDP. The low case estimates 0 to 1%. The *high* case estimates 2% to 4%. While 4% is a large dollar amount, arriving at that impact over nearly 100 years implies almost imperceptibly small changes in economic growth.

The specifics of this high-case model are informative: The Dynamic Integrated model of Climate and the Economy (known as the DICE model) developed by William Nordhaus at Yale University estimates 3.8 degrees Celsius of warming by 2100 costing an associated 3.9% of GDP in that year. But over time, this cost is the equivalent of slowing economic growth by less than one-tenth of one percentage point annually. By 2100, regardless of climate change, the world is more than six times

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wealthier than in 2015 under this model; global GDP is $500 trillion. The effect of climate change is to reduce that gain from a multiple of 6.7 to a multiple of 6.5. The economy also continues to grow, so that the climate-change-afflicted world of 2105 is already much wealthier than a world of 2100 facing no climate change at all.

Such estimates might seem counterintuitively low, especially given the rhetoric often employed. Part of the explanation lies in the almost incomprehensible economic progress that human civilization is capable of making over the course of a century. The annual cost identified by Nordhaus in 2100 is $20 trillion—massive by the standards of 2015, manageable by the standards of 2100. Further, that cost repeats every year even as the impacts are spread over many years. Thus, over the 2090 to 2110 time period, Nordhaus envisions the world spending a stunning $350 trillion to cope with climate change. One might despair over what else such resources might accomplish over that time period. But one must also recognize that the economy of 2100 will likely be able to allocate those resources toward climate change while also allocating to every other facet of society far more resources than are available today.

Corroborating these models, the IPCC concludes that "for most economic sectors, the impacts of drivers such as changes in population, age structure, income, technology, relative prices, lifestyle, regulation, and governance are projected to be large relative to the impacts of climate change." In other words, other worrying problems have a far greater capacity to influence progress.

None of this means the dislocations from climate change would be painless or the disruptions cheap. It is merely to observe that the impacts *expected* from climate change over the next hundred years look similar to those through which both civilization and our planet have successfully muddled over the past hundred and continue to struggle with today. Other worrying problems have their own anticipated but less-severe analogs, too. Whether a global pandemic strikes, epidemics will inevitably occur like the 2014 Ebola outbreak in West Africa that claimed more than 10,000 lives and cost the three countries at its center more than a tenth of their GDP. Whether artificial intelligence makes humans superfluous, self-driving vehicles could throw millions out of work in the years to come. Some countries will default on their debt; some business cycles will spawn deep global recessions.

17cv01906 Sierra Club v. EPA ED_001523_00005689-00008

These challenges are not existential threats or even ones that require analysis outside the standard policy process—that is, they are not really worrying problems at all.

extreme cases

If *expected* climate change represents the most likely outcome, *extreme* climate change represents the worst case: Models could be underestimating the warming that emissions will cause; feedback loops could send a 3-degree increase suddenly careening higher; or even at the expected level the climate could hit a tripwire that collapses global ecosystems or ocean currents or ice sheets or some other prerequisite of modern civilization.

Any of these things may be true—as is the nature of genuine *forecasted* challenges, they are mostly non-falsifiable. But while extreme climate change is a quintessentially worrying problem, it is also one that has no guarantee or even likelihood of occurring. Certainly, the "scientific consensus" or even the "scientific mainstream" on climate change does not extend to confidence in such scenarios.

To compare extreme climate change with other worrying problems, it is helpful to consider the dimensions that make a problem "worrying": that it is *forecasted*, *irreversible*, and *pervasive*. On all three, climate change appears less worrying than most.

Consider, first, the magnitude of the forecasted impact. Many worrying problems feature the credible prospect of killing a significant share of the human population or erasing modern civilization. Not extreme climate change. For instance, even considering higher temperature increases, the IPCC concludes that:

> Global climate change risks are high to very high with global mean temperature increase of 4°C or more above preindustrial levels in all reasons for concern, and include severe and widespread impacts on unique and threatened systems, substantial species extinction, large risks to global and regional food security, and the combination of high temperature and humidity compromising normal human activities, including growing food or working outdoors in some areas for parts of the year.

Obviously, each of those effects would entail enormous economic costs, carry severe consequences for entire nations, and wreak havoc with the

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natural environment. But as a worst case, it nevertheless pales in comparison to catastrophes that might kill a significant share of the human population or erase the basic physical and economic infrastructure of modern civilization.

Serious efforts to quantify existential threats concur. A 2016 report by the Global Priorities Project at Oxford offered as its example of a worst case that climate change could "render most of the tropics substantially less habitable than at present," as compared to hundreds of millions or billions of deaths associated with other challenges. Another Oxford study from 2008 asked conference participants to estimate the probability of various global catastrophes leading to human extinction in the coming century, and did not even see fit to include climate change as an option, while respondents gave molecular nanotechnology, superintelligent artificial intelligence, and an engineered pandemic each at least a 2% chance of erasing humanity by 2100.

Some analysts nonetheless place climate change among humanity's genuinely existential threats on the basis of its "fat tail," arguing that some unknowable but non-zero chance exists at the far-right end of the probability distribution for an outcome with essentially infinite cost. But this is true of all worrying problems—indeed, the characteristics of worrying problems might be viewed as those that generate such unknowable non-zero probabilities. Climate change cannot be *distinguished* from other worrying problems on that basis. Rather, the argument begs the question: What characteristics of climate change make its tail relatively fatter or thinner?

The weight accorded to a worrying problem's forecasted effects depends greatly on the number of causal steps between the underlying phenomena and worst-case outcomes. Where fewer steps are necessary, or where steps are relatively more likely to occur, the probability of the worst case arising should increase. For instance, whether an engineered pandemic devastates humanity depends on development of the necessary technology (highly likely), its use by a malicious actor (indeterminate), and its spread defying efforts at containment (indeterminate). Generally speaking, technological threats will have the shortest chains while sociological threats will have the longest ones.

Climate change would appear to sit somewhere in between. It has a very short chain to *some* impact—indeed, higher atmospheric concentrations of carbon dioxide are already having effects. But the connection

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from warmer temperatures to civilizational catastrophe is highly attenuated. The initial warming must cross thresholds that produce feedback loops. The ensuing warmth must produce environmental effects that cause unprecedented crises across societies. Those crises must in turn overwhelm the coping capacity of the entire global community, which must in turn produce wide-scale breakdowns in social order or trigger military conflict, which must in turn metastasize into what? Certainly, one can invent a scenario. But the specifics quickly become hazy, and a worst case entirely outside of human experience difficult to articulate.

The intent of this analysis is not to dismiss the severity of worst-case climate scenarios or to suggest that "wide-scale breakdowns in social order" are acceptable. But all worrying problems have worst-case forecasts that look this way, all with indeterminate probabilities of occurring, which leaves only a few options: We could become overwhelmed with despair, emphasize whichever problems are most politically useful, or seek out qualitative and quantitative bases for analysis. Too much discussion of climate change adopts the first or second approach. Efforts at the third approach will inevitably be imprecise and imperfect, but the burden of proof should lie on those declaring that climate change stands *apart* from other worrying problems to explain why that is so. The suggestion here is not that the *forecasted* threat of climate change does not belong alongside other worrying problems, only that the nature of its forecast cannot be what separates it as uniquely worrying.

Worrying in Slow Motion

In the other ways climate change is a worrying problem, meanwhile, it is less worrying than most. This is especially true with respect to irreversibility. While President Obama has lamented that climate change is a "comparatively slow-moving emergency," the one thing worse is a fast-moving one. Most worrying problems have worst-case scenarios that sweep the globe in a matter of months, days, or even minutes. For climate change, the damage unfolds over decades or centuries. This has several implications.

First, while climate change is irreversible compared to the typical policy problem, it does allow for some potential interventions even once well underway. For instance, natural processes already exist for extracting carbon dioxide from the atmosphere, and new technologies could be developed that accelerate those processes or create artificial ones. Alternatively, humans could use so-called "geoengineering" to

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effect other changes in the climate system that might counteract an intensifying greenhouse effect. These approaches offer no guarantee or even likelihood of success; turning to geoengineering might be seen as a disaster in its own right. But they offer more cause for optimism than exists with many other worrying problems.

Second, time permits adaptation. While the prospect of losing 50% of existing agricultural capacity is daunting, over a 50-year period only 1% of capacity needs to shift annually. By comparison, over the past 50 years, total agricultural output has tripled. Similarly, the need for hundreds of millions of people to migrate over a century amounts to little out of the ordinary on an annual basis. There are, for instance, more than 200 million migrant workers within China, as well as another 200 million international migrants and at least 60 million refugees around the world right now. The United Nations estimates 2.5 billion people will migrate to cities in just the next 35 years. Further migration, or perhaps the gradual abandonment of some cities or even entire regions, would obviously be extraordinarily costly and disruptive in human, economic, and environmental terms. But the reason such adaptations are rarely mentioned in the context of other worrying problems is not that they would be unnecessary, but rather that, in those other cases, they would be either impossible or else futile.

Purveyors of creatively catastrophic climate cases also face a Catch-22: Developing ever-more extreme scenarios typically requires ever-longer timescales. Even higher temperatures and risks of further dominos falling are threatened by 2300, or after "centuries." Confident forecasts of multi-meter sea-level rises are issued, to occur over multiple millennia. Harvard University's Martin Weitzman, the leading proponent of the case that climate change presents a uniquely "fat tail," falls into precisely this trap: The worst case he offers relies on continued temperature increases over multiple centuries. But if heightening the threat requires extending the timeframe further, it becomes diluted threefold: More time becomes available for adaptation, for economic progress and technological innovation that render the threat irrelevant, or for the model to fail. Any impact forecasted for 200, let alone 2,000, years into the future becomes almost inherently less cognizable than those already under study for 2100.

Finally, consider the pervasiveness of extreme climate change. By influencing the literal atmosphere in which all other human activity

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takes place, climate change perhaps exceeds any other challenge in the breadth of its causal connections and potential effects. But this same dynamic also leaves its connections to ultimate damage more dependent on interaction with other contributing factors. As a result, more alternative approaches exist for mitigation.

If one wants to prevent a financial collapse from sending the world into economic depression, one needs to prevent the collapse. By contrast, consider a favorite present-day causal chain used to illustrate the full specter of the climate threat: the asserted connection between climate change, drought in the Middle East, social upheaval in Syria, the country's gruesome civil war, the rise of ISIS, and the flood of refugees into Europe. Perhaps the catastrophe might have been averted or lessened had there been no drought. But better weather would seem an odd prescription for stability and prosperity in the Middle East, a region in which neither necessary nor sufficient. Democratic governance, social progress, more effective Western intervention by either regional or global powers, or even just better water-usage practices are all superior approaches.

Another country, bordering Syria, has suffered the same drought. But a report in *Scientific American* explains, "Water is driving the entire [Middle East] to desperate acts. Except Israel. Amazingly, Israel has more water than it needs." While Syria's oppressed society was crumbling, Israel launched a new era of desalination technology. The writer concludes: "The contrasts couldn't be starker. A few miles from [Israel], water disappeared and civilization crumbled. Here, a galvanized civilization created water from nothingness. As Bar-Zeev and I drink deep, and the climate sizzles, I wonder which of these stories will be the exception, and which the rule."

This is compelling storytelling. At first glance it seems a cautionary tale of climate change. But read the concluding sentence again. Climate change is not the independent variable, it is the constant. The question is whether civilization will equip itself to thrive anyway. What separates a world of 2100 dominated by drought-plagued failed states and one filled with prospering democracies that export water from blooming desert plains is not climate change. It is the world's ability to supplant radical ideology with modernity. This same pattern repeats itself in equipping societies to withstand natural disasters, feed themselves, eradicate disease, or thrive in the face of any other challenge climate change might pose.

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Perhaps sociological challenges like declining fertility, workforce participation, or family stability seemed out of place in the initial list of worrying problems. Yet it is these, not genuinely existential threats to humanity, with which climate change has the most in common. They all impose real costs but rely on lengthy causal chains to reach from basic phenomenon to true catastrophe. They all unfold slowly and leave opportunity for intervention. Their pervasiveness in each case depends on interaction with other sociological conditions that all invite policy interventions themselves. These worrying problems deserve attention, but not out of proportion to the genuine nature of the threat they pose.

Worrying Properly

"ISIS is not an existential threat to the United States," President Obama told the *Atlantic*'s Jeffrey Goldberg. "Climate change is a potential-existential threat to the entire world if we don't do something about it." The claim is nonsensical because it compares a worrying problem to the traditional national-security challenge of a specific terrorist group. Obviously, the former will appear more like an "existential threat." Conversely, one might choose a measure that would shift the calculus: ISIS and ISIS-inspired actors killed more Americans in 2016 than did climate change.

The discussion would be more constructive, and dramatically different, if "ISIS" were converted into the worrying problem of which it represents an early manifestation: As an existential threat, how does climate change compare to increasingly potent religious extremism that leverages technological advances to increase coordination, propaganda, and force? Which links more credibly to greater catastrophe given a 100-year timeframe? Which will prove more difficult to reverse or adapt to? In October, President Obama observed:

> There's already some really interesting work—not definitive, but powerful—showing that the droughts that happened in Syria contributed to the unrest and the Syrian civil war. Well, if you start magnifying that across a lot of states, a lot of nation states that already contain a lot of poor people who are just right at the margins of survival, this becomes a national security issue.

Surely that remains at least as true if the word "droughts" is replaced with "rise of radical Islam."

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The president's insistence on treating ISIS only on its current terms rather than considering a long-term, worst-case scenario is precisely the purported error in logic for which he chides anyone who refuses to feel the burning urgency of climate change because its effects today are not large. Or conversely, the over-politicization of radical Islam he insists on rising above bears striking resemblance to the over-politicization of climate change he purveys.

According to the Associated Press, only 17% of Americans "are alarmed by climate change and want action now." At the other extreme, 10% "are dismissive, rejecting the concept of warming and the science." The silent majority is either "concerned, thinking it's a man-made threat, but somewhat distant in time and place" (28%) or "cautious, still on the fence" (27%). That "alarmed" 17% tends to believe it has a monopoly on rational assessment of the situation and resorts to psychological explanations for the failure of others to join. But if climate change is just one worrying problem among many, the silent majority may have it right. In which case some of that psychological analysis might best be turned inward.

For instance, Harvard geology professor Daniel Schrag observed in a recent lecture, questioning reluctance to take decisive climate action: "People scratch their heads and say: Why don't people do what's right? Well, maybe they're rational. It's hard to accept. But in fact, maybe they actually don't value the future as much as some of us do." Schrag correctly identifies that the divide in perspectives on climate change reflects in part two different views on the future. But he simply assumes it is he and his audience who have it right. Yes, humans may irrationally discount future harms. But they also routinely fail to account for the way technological and societal change will render forecasts of the distant future useless. This latter error is especially prevalent in the environmental realm, where predictions of impending resource scarcity and civilizational collapse have been made frequently and proven wrong with equal frequency.

"Alarmed" analysts also complain that climate change is difficult to communicate because it is too abstract or too far removed from everyday concerns. But at least compared to most worrying problems, climate change is highly accessible. At the conceptual level, environmental calamity—especially one purportedly caused by malfeasance—has been a subject of fascination for the human psyche since the beginning of recorded history. More tactically, every natural disaster, extreme

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temperature reading, and even geopolitical event has become an excuse to talk about climate change—either by claiming a potential link, or else by asserting that it represents the kind of incident that will become more common. People who understand these events to be an endless rush of "signals" would understandably but irrationally elevate climate change above other worrying problems, even as the majority correctly tunes out most of the speculation as mere noise.

Perhaps most important, motivated reasoning might play a role. The typical claim holds that, because people do not like the proposed solutions to climate change, they prefer to minimize the extent of the problem. But it also seems to be the people most enamored of those policies who consider climate change uniquely demanding of the world's attention. If they are wrong, it might be in part their enthusiasm for a government-led green agenda that has led them astray. Notably, their emphasis on addressing climate change has fallen by the wayside when faced with policy options—nuclear power, fracking in China, carbon taxes offset by tax cuts, renewable facilities in environmentally sensitive areas—that demand tradeoffs with their other priorities. In 2016, for instance, activists in Washington state opposed a statewide carbon tax partly because its revenue would not be set aside for "necessary investments in our communities" and because tax supporters were not "listening to communities of color."

"Global warming," they wrote, "does not just represent an intersection of some of the most pressing challenges of our time—it also represents our opportunity to address these core issues."

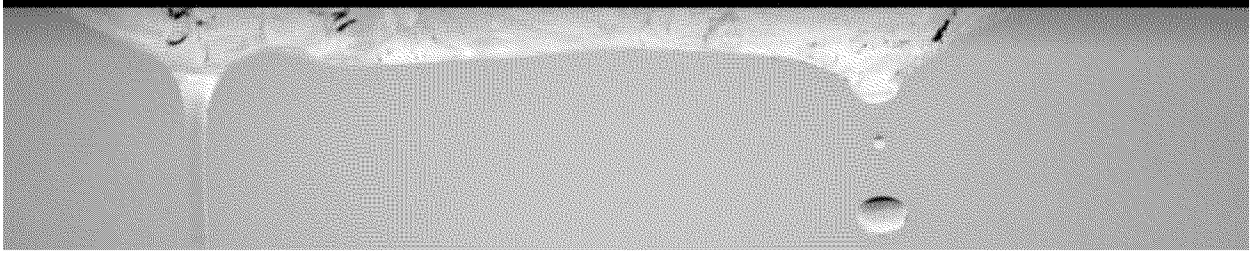
A more dispassionate placement of climate change alongside a range of worrying problems does not mean there is nothing to worry about. But it points away from *sui generis* mitigation at all costs and toward an existing model for addressing problems through research, preparation, and adaptation. It suggests that analytical exercises that would never be applied to other worrying problems, like assigning a "social cost" to each marginal unit of carbon-dioxide emissions, are as inappropriate as estimating a "social cost of computing power" as it brings humanity closer to a possible singularity, or a "social cost of international travel" as it elevates the risk of a global pandemic. Taxes on any of them are closer to political statements than efficient corrections of genuine externalities, and each would be more likely to stall meaningful economic and technological progress than to achieve a meaningful reduction of risk.

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Lessons might run in the other direction as well: We are not focusing as much on other challenges as we should. And perhaps, if climate change were consigned to its rightful place in the crowd, some additional attention might be available to concentrate elsewhere. If the level of research support, policy focus, and international coordination targeted toward climate change over the past eight years had gone instead toward preventing and managing pandemics, imagine the progress that could have been made. For a fraction of the cost of de-carbonizing an industrial economy, it could be hardened against cyber attacks; with a fraction of the attention corporations pay to their own purported climate vulnerability, they could make real strides in their own technological security.

A little bit of worry provides healthy motivation. Too much is a recipe for paralysis, distraction, and overreaction.

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SNAPSHOT March 21, 2017 Climate Change

The Problem With Climate Catastrophizing

The Case for Calm

By Oren Cass

Climate change may or may not bear responsibility for the flood on last night's news, but without question it has created a flood of despair. Climate researchers and activists, according to a 2015 *Esquire* feature, "When the End of Human Civilization is Your Day Job," suffer from depression and PTSD-like symptoms. In a poll on his Twitter feed, meteorologist and writer Eric Holthaus found that nearly half of 416 respondents felt "emotionally overwhelmed, at least occasionally, because of news about climate change." For just such feelings, a Salt Lake City support group provides "a safe space for confronting" what it calls "climate grief."

Panicked thoughts often turn to the next generation. "Does Climate Change Make It Immoral to Have Kids?" pondered columnist Dave Bry in *The Guardian* in 2016. "[I] think about my son," he wrote, "growing up in a gray, dying world—walking towards Kansas on potholed highways." Over the summer, National Public Radio tackled the same topic in "Should We Be Having Kids In The Age Of Climate Change?" an interview with Travis Rieder, a philosopher at Johns Hopkins University, who offers "a provocative thought: Maybe we should protect our kids by not having them." And Holthaus himself once responded to a worrying scientific report by announcing that he would never fly again and might also get a vasectomy.

Such attitudes have not evolved in isolation. They are the most intense manifestations of the same mindset that produces regular headlines about "saving the planet" and a level

of obsession with reducing carbon footprints that is otherwise reserved for reducing waistlines. Former U.S. President Barack Obama finds climate change "terrifying" and considers it "a potential existential threat." He declared in his 2015 State of the Union address that "no challenge—no challenge—poses a greater threat to future generations." In another speech offering "a glimpse of our children's fate," he described "Submerged countries. Abandoned cities. Fields that no longer grow. Political disruptions that trigger new conflict, and even more floods of desperate peoples." Meanwhile, during a presidential debate among the Democratic candidates, Vermont Senator Bernie Sanders warned that "the planet that we're going to be leaving our kids and our grandchildren may well not be habitable." At the Vatican in 2015, New York Mayor Bill de Blasio shared his belief that current policy will "hasten the destruction of the earth."



A boy flies his kite on dry and cracked farmland in San Juan town, Batangas province, south of Manila, April 18, 2010.

ROMEO RANOCO / REUTERS

And yet, such catastrophizing is not justified by the science or economics of climate change. The well-established scientific consensus that human activity is causing the climate to change does not extend to judgments about severity. The most comprehensive and often-cited efforts to synthesize the disparate range of projections—for instance, the United Nations' Intergovernmental Panel on Climate Change (IPCC)

and the Obama administration's estimate of the "Social Cost of Carbon"—consistently project real but manageable costs over the century to come. To be sure, more speculative worst-case scenarios abound. But humanity has no shortage of worst cases about which people succeed in remaining far calmer: from a global pandemic to financial collapse to any number of military crises.

What, then, explains the prevalence of climate catastrophism? One might think that the burgeoning field of climate psychology would offer answers. But it is itself a bastion of catastrophism, aiming to explain and then reform the views of anyone who fails to grasp the situation's desperate severity. *The Washington Post* offers "the 7 psychological reasons that are stopping us from acting on climate change." Columbia University's Center for Research on Environmental Decisions introduces its guide to "The Psychology of Climate Change Communication" by posing the question:"Why Aren't People More Concerned About Climate Change?" In its 100-page report, the American Psychological Association notes that "emotional reactions to climate change risks are likely to be conflicted and muted," before considering the "psychological reasons people do not respond more strongly to the risks of climate change." The document does not address the possibility of overreaction.

Properly confronting catastrophism is not just a matter of alleviating the real suffering of many well-meaning individuals. First and foremost, catastrophism influences public policy. Politicians regularly anoint climate change the world's most important problem and increasingly describe the necessary response in terms of a mobilization not seen since the last world war. During her presidential campaign, Democratic candidate Hillary Clinton promised a "climate map room" akin to Roosevelt's command center for the global fight against fascism. Rational assessment of cost and benefit falls by the wayside, leading to questions like the one de Blasio posed in Rome: "How do we justify holding back on any effort that may meaningfully improve the trajectory of climate change?"

Catastrophism can also lead to the trampling of democratic norms. It has produced calls for the investigation and prosecution of dissenters and disregard for constitutional limitations on government power. In *The Atlantic*, for example, Peter Beinart offered climate change as his first justification for an Electoral College override of the election of Donald Trump as U.S. president. The Supreme Court has taken the unprecedented step of halting implementation of the Clean Power Plan, Obama's signature climate policy, before a lower court even finished considering its constitutionality; his law-school mentor, professor Larry Tribe, likened the "power grab" of his star pupil's plan to "burning the Constitution."

The alternative to catastrophism is not complacency but pragmatism. Catastrophists typically condemn fracked natural gas because, although it results in much lower greenhouse-gas emissions than coal, it does not move the world toward the zero-emissions future necessary to avert climate change entirely. Yet fracking has done more in recent years to reduce carbon-dioxide emissions in the United States than all renewable energy investments combined. It has boosted U.S. economic growth as well.

The idea that humanity might prepare for and cope with climate change through adaptation is incompatible with catastrophists' outlook. Yet if the damage from climate damage can be managed, anticipating challenges through research and then investing in smart responses offers a more sensible path than blocking the construction of pipelines or subsidizing the construction of wind turbines. Catastrophists countenance progress only if it can be fueled without carbon-dioxide emissions. Yet given the choice, bringing electricity to those who need it better insulates them from any climate threat than does preventing the accompanying emissions.

The cognitive fault lines separating catastrophists from others cause both sides to reach radically different conclusions from the same information. Catastrophists assume that their interpretation is correct, and so describe other thinking as distorted. But if the catastrophists have it wrong, perhaps the distortions are theirs.

CLIMATE CHANGE COSTS

A strong scientific consensus holds that human activity is producing climate change. But from that starting point, scientists have produced a range of estimates in response to a variety of complicated questions: How quickly will greenhouse gases accumulate in the atmosphere? What amount of warming will any given accumulation cause? What effect will any given level of warming have on ecosystems and sea levels and storms? What effect will those changes in the environment have on human society? The answers to all of these questions are much debated, but broad-based efforts to synthesize the best research in the physical and social sciences do at least offer useful parameters within which to assess the nature of the climate threat.

On scientific questions, the gold-standard summary is the Assessment Report created every few years by thousands of scientists under the auspices of the United Nations' Intergovernmental Panel on Climate Change (IPCC). By averaging widely varying projections and assuming no aggressive efforts to reduce greenhouse-gas emissions, they estimate an increase of three to four degrees Celcius (five to seven degrees Fahrenheit) by the year 2100. The associated rise in sea levels over the course of the twenty-first century, according to the IPCC, is 0.6 meters (two feet).

Most of the rise in sea levels results not from melting glaciers, but from the thermal expansion of ocean water as it becomes warmer. Melting ice from Greenland and Antarctica, which may eventually threaten a dramatic increase in sea levels, will barely begin in this century—in the IPCC analysis, the Antarctic ice sheet will have almost no effect and may even slow sea level rise as increased precipitation adds to its snowpack. Meanwhile, melting from Greenland's ice sheet will contribute 0.09 meters (3.5 inches). In fact, "the near-complete loss of the Greenland ice sheet," which could raise sea levels by seven meters, the IPCC reports, "would occur over a millennium or more."

What about ecology? Predicting or quantifying damage to vulnerable ecosystems and specific species is notoriously difficult, but the IPCC offers a helpful heuristic for the likely magnitude of damage from climate change: "With 4°C warming, climate change is projected to become an increasingly important driver of impacts on ecosystems, becoming comparable with land-use change." In other words, the impact should be similar to that which human civilization has imposed on the natural world already. Substantial and tragic, to be sure; but not something that modern society deems intolerable or a threat to human progress.

Economic tools called "integrated assessment models" attempt to convert the potential effects of climate change—on sea level and ecosystems, storms and droughts, agricultural productivity, and human health—into tangible cost estimates. This exercise is as much art as science, but it represents the best available exploration of how the impacts of climate change will likely stack up against society's capacity to cope with them. Three of these models form the basis of the Obama administration's analysis of the "Social Cost of Carbon"—the U.S. government's official estimate of how much climate change will cost and thus what benefits come from combatting it. Economists and policymakers who want to place a price (that is, a tax) on carbon-dioxide emissions to force emitters to pay for potential damage resulting from climate change typically embrace the analysis as well.

According to the assessment models, a warming of three to four degrees Celcius by 2100 will cost the world between one and four percent of global GDP in that year. To put the high end of that range concretely, the Dynamic Integrated Climate-Economy (DICE) model developed by economics professor William Nordhaus at Yale University estimates that in a world without climate change, the global economy's GDP would grow from $76 trillion in 2015 to $510 trillion in 2100 (an annual growth rate of 2.3 percent). A rise in temperatures of 3.8 degrees Celcius would cost 3.9 percent of GDP ($20 trillion) that year, effectively reducing GDP to $490 trillion.



A man wears a polar bear costume and holds a banner with the message, "Climate Change is Unbearable" as he participates in a demonstration near the Eiffel Tower in Paris, France, as the World Climate Change Conference 2015 (COP21) continues near the French capital in Le Bourget, December 12, 2015.

MAL LANGSDON / REUTERS

Twenty trillion dollars is a very large number—representing a cost greater than the entire annual economic output of the United States in 2016. But from the perspective of 2100, such costs represent the difference between the world being 6.5 times wealthier than in 2015 or 6.7 times wealthier. In the DICE model, moreover, the climate-change-afflicted world of 2105 is already more prosperous than the climate-change-free world of 2100. And because the impacts and costs of climate change emerge gradually over the century—0.3 percent of GDP in 2020, 1.0 percent in 2050—in no year does the model foresee a reduction in economic growth of even one-tenth of a percentage point. Average annual growth over the 2015–2100 period declines from 2.27 percent to 2.22 percent.

To be sure, economic estimates are incomplete. They cannot incorporate the inherent value to a community of remaining in its ancestral lands or any obligation humanity might have to protect other species and habitats. Even within the economic sphere, the assessment models depend on subjectively chosen inputs and averages across disparate forecasts; they rest atop numerous other models, each with their own subjectively chosen inputs and averages. Among the three models the Obama administration picked

for its analysis alone, the range of outputs is enormous: the DICE model's four percent-of-GDP estimate is near the 95th percentile of the projections from the middle-case model, while the low-case model's one percent-of-GDP estimate is below the middle-case's 5th percentile. But nowhere is catastrophe to be found.

Limitations and all, such estimates remain the best available. Further, the shortcomings of the integrated assessment models have little to do with their lack of support for catastrophism. The gap between what the models describe and what catastrophists fear does not emerge because the models disregard the heritages of indigenous cultures or the intangible value of every species. Nor do catastrophists disagree with particular inputs or outputs, expecting that tweaks to certain assumptions might validate their views. Rather, the societal collapse that catastrophists envision—one that poses an "existential" threat beyond the scope of other human problems, one that makes procreation an ethically dubious proposition—is simply irreconcilable with the outlook the science and economics offers.

Indeed, the logic of catastrophism seems to run backward: from the conclusion that significant human influence on the climate must portend unprecedented danger to the search for facts to support that narrative. But forecasts on these scales of time and magnitude exceed common experience and thus defy intuition, which facilitates misinterpretation and frustrates self-correction. Placing the problem in proper perspective requires appreciating the long-term costs in the context of the distant future when they will arise, distinguishing costs spread over long time periods from those borne all at once and, finally, applying separate analyses to expected outcomes and worst case scenarios. Catastrophists get these things wrong.

COSTS IN THE DISTANCE

The power of compounding growth is the most crucial and counterintuitive phenomenon for understanding long-term projections. Many first encounter it in the tale of the ancient chessmaster who offers to train the emperor in return for one grain of rice on the board's first square, two grains on the second, four on the third—doubling on each square through the sixty-fourth. This sounds quite affordable, but the payment for the last square turns out to be just over nine quintillion (million-trillion) grains.

An economy growing by some percentage each year follows a similar trajectory. If GDP rises by just three percent per year, the economy will grow almost 20-fold in a century. In constant 2009 dollars, U.S. GDP was less than $1 trillion in 1930. Eighty-five years later, after growing at an average compounding rate of 3.4 percent, it exceeded $16 trillion. Eighty-five years from now, even at half that growth rate, U.S. GDP will approach $70 trillion. For the majority of the world population, which resides in the

developing world and thus starts further behind, progress will likely be faster—more closely mirroring the booms in the United States and other now-developed countries in the last century. A $500 trillion global economy in 2100 in which most of the world approaches the standard of living already enjoyed in the West may sound fantastical. But it only requires steady progress.

The first cognitive fault line separating catastrophists from others emerges here, over how to interpret the severity of climate-change damages in a world so radically different and more prosperous than our own. The standard narrative holds that most people improperly discount or ignore costs in the distant future. To the extent that those people are rational, their discounting of future problems must mean that they are immoral. "People scratch their heads and say: Why don't people do what's right?" remarked Harvard geology professor Daniel Schrag in a 2013 lecture. "Well, maybe they're rational. It's hard to accept. But in fact, maybe they actually don't value the future as much as some of us do. The benefits will go to their children, to their grandchildren, and beyond."

But what if, rather than not caring about their grandchildren, people have confidence that their grandchildren will enjoy a far higher standard of living and have a greater capacity to cope with whatever climate change might bring? In purely economic terms, both seem likely. Even after accounting for climate change, the DICE model forecasts a world 6.5 times richer than today's for a population only 40 percent larger. Condemn mainstream economic estimates as hopelessly optimistic, increase the annual cost estimate for 2100 tenfold from $20 trillion to $200 trillion, and the world is still four times richer than today.

The abstract GDP totals represent more than just a hypothetical capacity to absorb costs. The concrete implications of this growth will be leaps forward in societal resilience and technological capability of the same magnitude achieved in the last century. Without predicting the future, analogs from the past indicate the kinds of change to expect. In many cases, they address squarely the central concerns raised by climate change.

Environmentalists, for example, have long worried about global population outstripping food supply. In 1970, the biologist Paul Ehrlich warned that, due to population growth, "at least 100-200 million people per year will be starving to death during the next ten years." Instead, a technological revolution caused agricultural yields to surge. Today, even as concern grows about potential water crises around the world, the seeds of their resolution may be sprouting as well. Israel, suffering from the same drought often blamed for helping plunge Syria into civil war, is using desalination technology to make the desert bloom. Recently, it found itself with a water surplus. India is constructing

more than one million irrigation ponds that will increase agricultural yields by as much as 300 percent and buffer against changes in the timing of the monsoon season.

Continued progress in public health, through new breakthroughs and the transfer of best practices to the developing world, will likely ensure that life expectancy and quality will continue to increase regardless of how the climate changes. Perhaps climate change will increase the range of tropical diseases compared to a no-climate-change world. But in absolute terms, the prevalence of and mortality from such diseases should plummet. The public health challenges of 2100 will be as distant from today's as today's are from those of the early 1900s, prior to the development of either antibiotics or vaccines, when one in three American deaths were from pneumonia, tuberculosis, or diarrhea and enteritis.

To offer one more example, human infrastructure continues to triumph over the challenges and disasters of the natural world. Richer countries experience significantly lower fatality rates from natural disasters and also significantly lower damages relative to the size of their economies. The World Health Organization reports that in the three cyclones of maximum severity striking Bangladesh in 1970, 1991, and 2007, total fatalities declined from 500,300 to 138,958 to 4,234. The diffusion of existing technologies worldwide, and the development of new ones—coupled with unprecedented resources for implementation—should ensure that these trends continue.

Incremental improvements in water management, public health practices, and infrastructure are a conservative vision of progress. But innovation beyond today's imagination, in directions by definition unpredictable, is likely as well. Robin Hanson, a researcher at Oxford University's Future of Humanity Institute, wrote a well-received book called *The Age of Em* in which he argued that by 2100, computer simulations of humans will dominate an economy that doubles in size every month. James Lovelock, the British scientist, has likewise argued that, "before we've reached the end of this century, even—I think that what people call robots will have taken over."

Conversely, if innovation and economic growth stall; if the developing world halts its development; if wealthy nations begin to move backward—climate change will be the least of humanity's worries. The world's economic system of debt-based capitalism, predicated on continued growth, would collapse. The political systems built on that economic system would collapse as well. In that world, as in the prosperous one, the effects of climate change are a marginal consideration.

At its extreme, the conflation of future impacts with present circumstances produces incoherent results. Take, for instance, the EPA's "Climate Change Risks and Analysis"

project. Among its most prominent claims: Unmitigated climate change will cause more than 12,000 annual deaths from extreme heat in major U.S. cities by 2100. (The U.S. Centers for Disease Control and the EPA report fewer than 500 heat-related deaths in 2014, a figure that has been on a downward trajectory over the past 15 years). To reach 12,000 by 2100, the analysis took each city's mortality rate from extreme heat in 2000 and applied it to the hotter temperatures forecast for 2100. It concluded that, by 2100, the heat in New York City would be killing at 50 times the rate in Phoenix in 2000 (even though the New York City of 2100 is not expected to be as hot as the Phoenix of 2000). If one believes that residents of New York City will be dropping like flies from heat in the future, climate change must seem terrifying indeed. But that is not a rational belief.

COSTS OVER TIME

A second cognitive fault line emerges over interpretation of climate change's slow-motion onset. Catastrophists lament this characteristic and blame it for humanity's failure to feel properly alarmed. The frog-in-boiling-water parable is popular here, even appearing in Al Gore's *An Inconvenient Truth*: try to throw a frog into a pot of boiling water, and it will leap out; but heat the frog in a pot of cool water, and it will sit there until dead.

The problem is that the parable turns out to be completely wrong. A frog tossed into boiling water will be killed or badly injured; one heated up will jump out when it becomes uncomfortable. In this, people are something like frogs: the one thing worse than a slow-motion crisis is a rapid one.

In the climate context, even from the vantage point of a prosperous 2100, the sudden inundation of coastal cities or disappearance of the monsoon would produce civilization-rattling disruptions. "Just imagine, for example, monsoon patterns shifting in South Asia where you have over a billion people," warned Obama in 2016. "If you have even a portion of those billion people displaced, you now have the sorts of refugee crises and potential conflicts that we haven't seen in our lifetimes." Catastrophists frequently cite this specter of hundreds of millions of refugees, which offers a vague but ominous scenario that might derive from any number of catastrophes and cause any number of others.

But would shifting monsoon patterns displace so many? Remember, growing wealth and infrastructure in the developing world will ensure a level of resilience far greater than today's. Of equal importance, gradual challenges invite adaptation: even if fully half of global agricultural production must relocate over a century, the required shift each year is only 0.5 percent of total production. For comparison, annual additions to global food production have averaged more than two percent over the past 50 years.

Even stipulating that adaptations will displace hundreds of millions of people, that displacement will not happen all at once. Spread over decades, such a disruption would look little different from the status quo. China alone currently supports a domestic migrant worker population of 278 million. According to estimates by the United Nations, there are currently 232 million international migrants. The organization projects that the figure will grow by several million each year. By 2050, the World Bank estimates that 2.5 billion people will migrate to cities for reasons unrelated to climate change. Climate change may thus be among the forces that cause the twenty-first century to witness upheavals and migrations on a scale similar to those of the nineteenth and twentieth—other forces were on full display in 2016—but that can hardly earn it the designation of "unprecedented" or "existential."

The costs of climate adaptation can also appear deceptively large if the alternative of maintaining the status quo is imagined to be free. But regardless of climate change, almost every component of the global economy's capital base—from city sewers to farm silos—will be fully depreciated and will need to be replaced by new investment over the next 100 years, both because existing infrastructure will deteriorate and because new alternatives will be worth installing. In that way, major coastal cities will be entirely rebuilt regardless of whether rising seas threaten them. If people allocating capital—be they small-town farmers, resort designers, or mayors—have the information and incentives to incorporate climate adaptation into their planning, it need not impose sudden and unmanageable recovery costs.

Recall Obama's warning: "Submerged countries. Abandoned cities. Fields that no longer grow." The statement actually began with the caveat that it is "a glimpse of our children's fate if the climate keeps changing faster than our efforts to address it." But certainly the climate is not yet changing too fast for society to address. And if societies continue to exhibit and build upon the adaptability they displayed in the lastcentury, the glimpsed fate will never come to pass.

Faced with the claim that total climate costs of $20 trillion in 2100 represent an entirely manageable burden, the catastrophist might respond that $20 trillion must be implausibly low for the extent of disruption climate change might entail. He or she might also emphasize that climate change is not a one-time phenomenon: its effects will accumulate and compound, striking year after year against societies with a constrained capacity to respond.

But that argument gets the dynamic backward. Although climate impacts may be permanent and on-going, costly adaptation—if done wisely—need occur only once. A Manhattan properly insulated from rising waters will not require new protection each time sea level climbs another foot. Conversely, that hypothetical $20 trillion represents

the resources that society might commit to the problem in the single year 2100. In Nordhaus' DICE model, the total allocated to climate costs between 2050 and 2150 is more than $2.5 quadrillion, all without ever slowing annual growth by more than one-tenth of one percentage point. The world's productive capacity, bolstered by innovation and adaptation over time, is orders of magnitude larger than the demands climate change is expected to impose. Such adaptation may represent a tragic long-term drain on society's resources, but that does not mean it will noticeably alter the trajectory of human civilization.

COSTS IN THE EXTREME

To the climate catastrophist, even a credible argument that climate change is manageable may offer little comfort. So what if the IPCC's best guess of sea-level rise by 2100 is only two feet? Some scenarios contemplate much worse outcomes, and what if those come true?

The *Esquire* article describes the views of Michael Mann, the climatologist who created the famous "hockey-stick" chart used to argue that centuries of climate stability were giving way to sharp warming in recent decades. "As Mann sees it, scientists like [NASA's Gavin] Schmidt who choose to focus on the middle of the curve aren't really being scientific. ... A real scientific response would also give serious weight to the dark side of the curve." In Mann's own words: "Maybe it is true what the ice-sheet modelers have been telling us, that it will take a thousand years or more to melt the Greenland Ice Sheet. But maybe they're wrong; maybe it could play out in a century or two."

Catastrophists worry that warming temperatures will set off an uncontrollable feedback loop, begetting ever-accelerating warming that leaves the planet uninhabitable; ocean currents might suddenly reverse, sending local climates into wild gyrations; unexpected ice-sheet dynamics might produce rapid glacial melting that causes sea levels to rise rapidly by multiple meters; agricultural yields could collapse, triggering widespread famine and conflict. Perhaps. If nothing else, such claims are unfalsifiable.

But it is difficult to know how to weigh such extreme hypotheticals. Emphasizing them risks departing the world of empirical research and model-based forecasting for one governed by fear. A variety of other long-term challenges with truly existential worst-case scenarios already exists, from the archetypical nuclear war to the emergence of artificial super-intelligence hostile to humans, to the global spread of an engineered pandemic, to coordinated cyberattacks on physical and financial infrastructure. Working with a catastrophic mindset and a century-long timeline, one can construct an apocalyptic scenario from almost any problem.

Here, the third fault line emerges over placement of climate change in broader context. Catastrophists see their worries about extreme climate change as unique from, and more concrete than, other speculative fears. But when held up for comparison, extreme climate change does not justify a special status. In objective terms, the worst case for climate change does not even place it among the worst of worst cases. For instance, the Global Priorities Project at Oxford observes that climate change could "render most of the tropics substantially less habitable than at present," as compared to the hundreds of millions or billions of deaths associated with other challenges. Another Oxford study surveyed conference participants about the extinction-level risks of various catastrophes and neglected to even consider climate change; respondents gave molecular nanotechnology, superintelligent AI, and an engineered pandemic all at least a two percent chance of erasing humanity by 2100.

A climate change worst-case scenario also differs from others in its speed. Although genuinely existential threats to civilization might circle the globe in months, days, or even minutes, total climate catastrophe unfolds over decades or centuries. One might not like humanity's chances of reversing or coping with such a threat, but the chances must be higher than for threats striking hundreds or thousands of times faster.

These factors place catastrophists in a catch-22. To locate climate-change impacts of sufficient magnitude, they envision scenarios that require temperatures to climb and dominos to fall across multiple centuries. But extending the timeframe dilutes costs faster than it can increase them. No matter how apocalyptic, impacts forecasted hundreds of years in the future are inherently less alarming than those under discussion for the year 2100.

Several factors may help to explain why catastrophists sometimes view extreme climate change as more likely than other worst cases. Catastrophists confuse expected and extreme forecasts and thus view climate catastrophe as something *we know will happen*. But while the expected scenarios of manageable climate change derive from an accumulation of scientific evidence, the extreme ones do not. Catastrophists likewise interpret the present-day effects of climate change as the onset of their worst fears, but those effects are no more proof of existential catastrophes to come than is the 2015 Ebola epidemic a sign of a future civilization-destroying pandemic, or Siri of a coming Singularity.

Catastrophists express frustration that the diffuse and intangible impacts of climate change prevent the threat from receiving sufficient attention—"if global warming took out an eye every now and then," Dan Gilbert, professor of psychology at Harvard University, wrote in 2006, "OSHA would regulate it into nonexistence." But as compared to other long-term challenges, claims of climate impact appear constantly.

Natural disasters, extreme temperatures, and even geopolitical events find themselves linked to discussions of climate change or, if no link is available, cited as the kind of thing climate change might make more common. Greater obsession with climate change produces more coverage of it, stoking greater obsession. Meanwhile, arguments against catastrophism rarely reach the audience that might benefit most from hearing them.

Finally, "motivated reasoning" likely plays a role. A charge issued frequently by catastrophists is that anyone expressing inadequate concern must be avoiding the problem because he dislikes the consequences of taking action—bigger government, more regulation, less growth. But this presumably cuts both ways. The policy agenda and social outlook demanded by the catastrophist perspective tends to align closely with the pre-existing preferences of catastrophists. Perhaps tellingly, when proposals arise that are less to their liking—nuclear power and fracked natural gas as substitutes for coal, carbon taxes paired with other tax cuts, use of conservation land for renewable power, research on geo-engineering—the overriding imperative to address climate change has tended to fall by the wayside.

COSTS TO CREDIBILITY

The errors of today's climate catastrophists repeat those made by the last generation of environmental doomsayers. As Paul Romer, the chief economist of the World Bank, recently observed:

> *During the 1970s, the Club of Rome famously argue d that our economic system was on the verge of collapse because we were running out of fossil fuel. This analysis was flawed not simply because it got the magnitudes wrong. It got the signs wrong. The problem facing the world is not that the earth's crust contains too little fossil fuel and that we won't have enough innovation to solve this problem. The real problems are that the earth's crust contains far too much fossil fuel and that too much [innovation] is making this problem much worse.*

In other words, even though the Club of Rome was wrong in the 1970s, Romer believes its broader perspective should be embraced. Seemingly oblivious to the irony, he attributes the failure last time around to "an instance of motivated reasoning. Advocates seem to have been too eager to generate a sense of pessimistic urgency."

Schrag, the Harvard geology professor, is even more blunt. Reflecting on Ehrlich's predictions of eminent mass starvation in the 1970s, Schrag acknowledges that "none of his predictions came true." Nevertheless, says Schrag, "It's quite amazing that we're

actually able to feed the world at all. Ehrlich wasn't wrong in '68, he's just wrong today." In this view, the catastrophist is not accountable for considering how growth, innovation, and adaptation might avert catastrophe. But Ehrlich was indeed wrong in 1968, for the same reasons his intellectual heirs are likely wrong about climate change today.

Some catastrophists do acknowledge, at least implicitly, the limits of their case. Unfortunately, this leads them to demand the creation of new evidence. Nicholas Stern, lead author of the United Kingdom's climate assessment, wrote recently in *Nature*: "The next IPCC report needs to be based on a much more robust body of economics literature, which we must create now. It could make a crucial difference." Stern expressed concern that the current generation of economic models fails to adequately account for the risk of shocks "such as the thawing of permafrost, release of methane, and other potential tipping points," or of social costs "such as widespread conflict as a result of large-scale human migration to escape the worst-affected areas."

Dave Roberts, whose TedX presentation entitled "Climate Change Is Simple" warns of "Hell on Earth" by 2100, suggests that the integrated assessment models should use surveys of "expert opinion" to produce "better, more representative modeling." But the DICE model, as an example, already incorporates such a survey. Undoubtedly, new models designed to vindicate the catastrophists' perspective will soon emerge. But perhaps the existing models are saying something very important about the nature of human progress and long-term challenges that catastrophists need to hear.

Or perhaps they hear more than they let on. Obama catastrophized in speeches, but seldom when the prospect of a follow-up question loomed. Pressed by *New York Times* reporter Mark Landler whether he "believe[s] the threat from climate change is dire enough that it could precipitate the collapse of our civilization," Obama relied on his legalistic rather than rhetorical gifts: "Well, I don't know that I can look into a crystal ball and know exactly how this plays out. But what we do know is that historically, when you see severe environmental strains of one sort or another on cultures, on civilizations, on nations, that the byproducts of that are unpredictable and can be very dangerous." True enough—and the same could be said for a whole host of other challenges. For instance, try replacing Obama's phrase "severe environmental strains" with "strains of militant religious extremism."

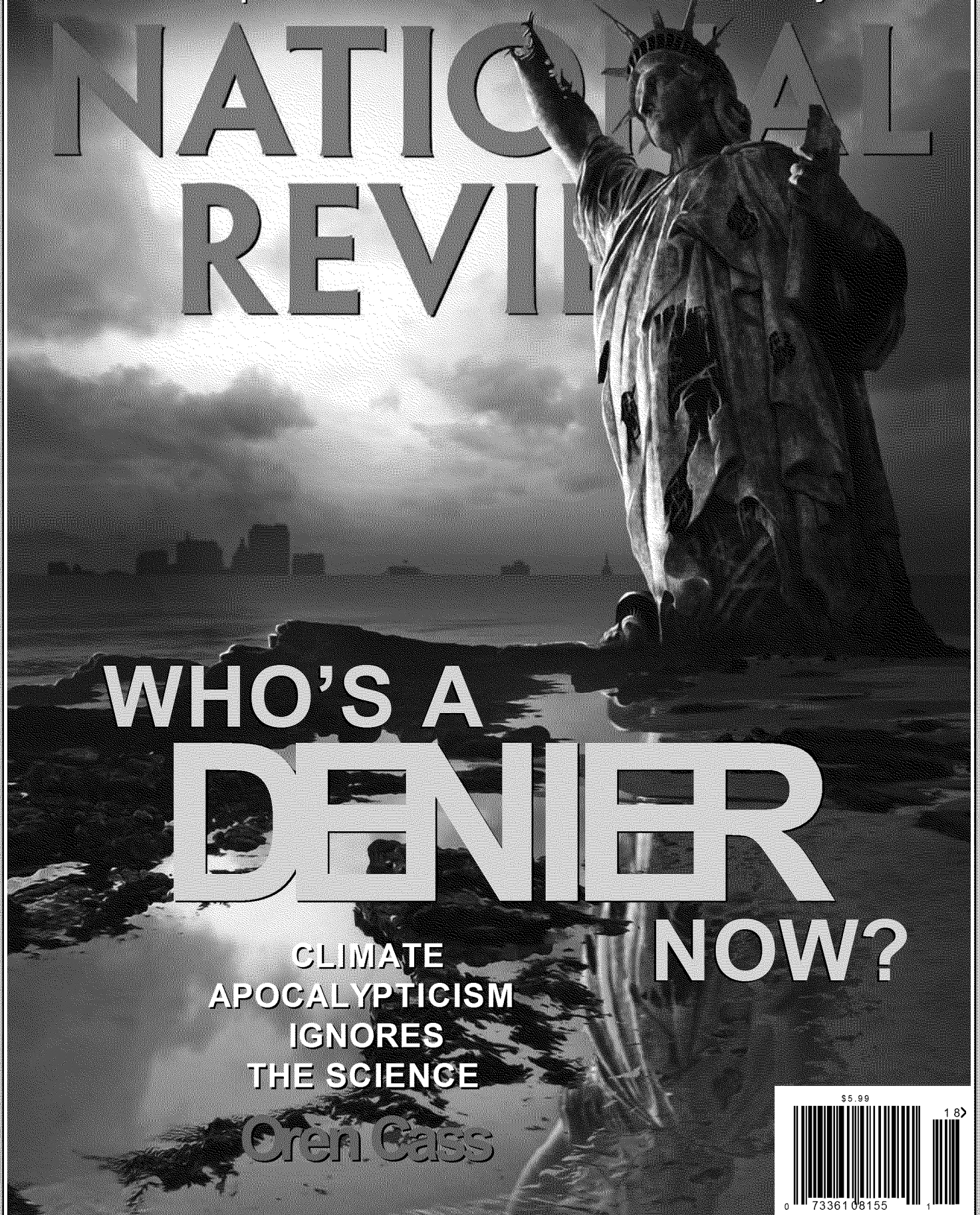
As for Bry, the newspaper columnist; Rieder, the philosophy professor; and Holthaus, the meteorologist? They each decided to have kids after all.

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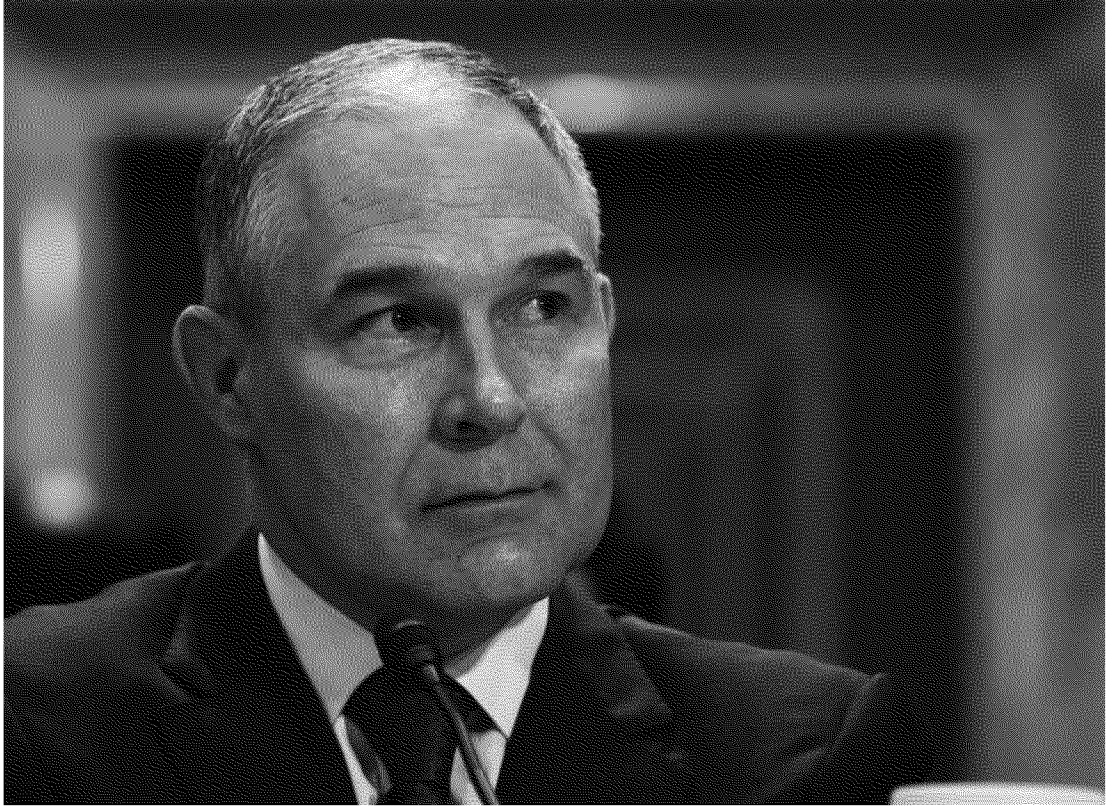
WHO'S A DENIER NOW?

CLIMATE APOCALYPTICISM IGNORES THE SCIENCE

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Scott Pruitt during his confirmation hearing to lead the Environmental Protection Agency, January 18, 2017

Who's The Denier Now?

Climate apocalypticism ignores the science

BY OREN CASS

THE epithet "climate denier," intended to invoke Holocaust denial, has always been tasteless and inapt. Climate change is not like the Holocaust, nor is questioning the accuracy and predictive power of a scientific model like questioning the historical fact of a genocide that murdered 6 million Jews. But climate activists delighted in defining their opposition this way, with help from prominent figures such as Barack Obama, who in 2014 used Twitter to condemn "climate change deniers" and promote a website, run by Organizing for Action (formerly Obama for America), that featured large black-and-white pictures of then–House speaker John Boehner and Senator Marco Rubio atop a green "Climate Change Deniers" banner. "On climate," asked the site's headline, "whose side are you on?"

For a while, this seemed to work. Framing the climate debate as one between noble keepers of the scientific flame and people akin to Nazis gave the former group license to say almost anything. To the casual observer, even the most egregious exaggeration about climate science could seem reasonable compared with its outright rejection. Thus, Obama's assertion in his 2015 State of the Union address that "no challenge—no challenge—poses a greater threat to future generations than climate change" became widely accepted. When Senator Bernie Sanders warned during a presidential debate that "the scientific community is telling us that if we do not address the global crisis of climate change . . . the planet that we're going to be leaving our kids and our grandchildren may well not be habitable," he was not laughed off the stage.

Often, the politicians and pundits targeted with the "denier" label did deserve blame. Ignoring the best available scientific research—an obvious starting point in any other policy debate—was irresponsible or dishonest. Their arguments rarely emerged from any valuable scientific insight, but usually from a fear that acknowledging the scientific basis of climate change would mean accepting radical and costly responses. This was doubly counterproductive: Not only did it grant by default a mainstream foothold to outlandishly over blown climate fears, but also it sidelined and undermined more important and compelling policy-based objections to the activist agenda.

And then a funny thing happened: "Denial" gave way to those more reasoned arguments. Perhaps the accumulation of scientific evidence changed minds. Perhaps it was only the political reality that sank in. Regardless, opponents of aggressive climate policy mostly stopped questioning whether the climate was warming and whether human activity played a role—the two points of agreement that define the famous "97 percent consensus" of climate scientists—and started explaining why that consensus did not justify costly and ineffective policies.

This shift in focus from the basic science of climate change to its public-policy implications has been a disaster for climate activists, exposing the flabbiness at the core of their position. Softened by years of punching down at their opponents' worst

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arguments, they became addicted to asserting that "science says so," and they are now lost when it doesn't.

When Sanders, back in the Senate, questioned Oklahoma attorney general Scott Pruitt during the latter's confirmation hearing to lead the Environmental Protection Agency, it was the interrogator who couldn't keep his facts straight. Pruitt asserted that "the climate is changing, and human activity contributes to that in some manner," explaining that he had inserted the caveat ("in some manner") because "the ability to measure, with precision, the degree of human activity's impact on the climate is subject to more debate." Pressed by Sanders, he stated again: "The climate is changing, and human activity impacts that."

Pruitt wanted to discuss "the job of the [EPA] administrator," which he noted was "to carry out the statutes passed by [Congress]." He also agreed that the "EPA has a very important role at regulating the emission of CO_2." But Sanders was determined to show that Pruitt rejected the scientific consensus, even if this meant falsifying the contents of that consensus.

Sanders claimed that "97 percent of the scientists who wrote articles in peer-reviewed journals believe that human activity is the fundamental reason we are seeing climate change." That is wrong. A survey-of-surveys published last year in *Environmental Research Letters* reported that prior surveys had found 78 percent of scientists agreeing that "the cause of global warming over the past 150 years was mostly human," 82 percent agreeing that "human activity is a significant contributing factor in changing mean global temperatures," and 85 percent agreeing that "anthropogenic greenhouse gases are the dominant driver of recent global warming." Of course, even among those expressing agreement about the "significant" or "dominant" human role, debate would presumably have emerged about whether natural factors accounted for 0, 10, 25, or 50 percent.

Sanders also claimed that "97 percent of scientists who have written articles for peer-reviewed journals have concluded that climate change is real, it is caused by human activity, and it is already causing devastating problems in our country and around the world." As to the devastating problems, this also is false. He said "the vast majority of scientists are telling us that if we do not get our act together and transform our energy system away from fossil fuel, there is a real question as to the quality of the planet that we are going to be leaving our children and our grandchildren." Also untrue.

In fact, scientists and economists hold widely varying views on the costs that climate change has caused and will cause. Surveys of scientists rarely address social consequences or policy implications. When President Obama tweeted that "Ninety-seven percent of scientists agree: #climate change is real, man-made and dangerous," even *Salon* had to acknowledge he was wrong to say "dangerous." Only half of the economists surveyed by NYU's Institute for Pol i cy Integrity in 2015 believed "immediate and drastic action is necessary" on climate change; only 56 percent said that "if nothing is done to limit climate change in the future" it would be a "very serious" problem for the United States; only 41 percent believed "climate change is already having a negative effect on the global economy."

But the *New York Times* had categorized the Pruitt nomination under the heading CLIMATE CHANGE DENIAL, albeit without any support. So when Pruitt testified, *Times* reporter Cor al Davenport tweeted, "#Pruitt on #climate: 'Science tells us climate is changing' but says extent of human role is up for debate. False." In her accompanying story, she reported that Pruitt's views were "not consistent with the scientific consensus" as reflected by the U.N.'s Intergovernmental Panel on Climate Change (IPCC).

What does the IPCC actually say? While it is "extremely likely that human activities caused more than half of the observed increase in [temperature] from 1951 to 2010," the attribution for the approximately 0.6°C of warming requires wide ranges that are "likely" to be accurate: between 0.5 and 1.3°C for greenhouse gases, between –0.6 and +0.1°C for other human activity, and between –0.1 and +0.1°C apiece for natural causes and internal variability. For the slower warming observed during the period from 1998 to 2012, the IPCC could offer only low to medium confidence in its explanation.

So Pruitt's comments were not "False." Indeed, in a later story Davenport's colleague Justin Gillis acknowledged that Pruitt's position was "almost axiomatically true." But, Gillis argued, it remained problematic because

> anybody who did not know better might come away thinking there is room to doubt whether humans are the main cause of global warming. Mr. Pruitt did not actually say that, of course. . . . Mr. Pruitt and the other Trump nominees labored to avoid overt denial while signaling to their allies that there is enough doubt to justify inaction on emissions or even rolling back steps the Obama administration took.

This is the crux of the matter. Statements about climate change are no longer being policed for their accuracy, but rather for the degree to which they help or harm the activist agenda. *The Atlantic* explains that "the new climate denial is like the old climate denial" because "both are excuses for inaction." Why didn't Sanders ask Pruitt the obvious follow-ups: "Do you see that lack of precision as relevant to the policy choices facing us?" or "Of course, science is always subject to imprecision, but do you believe we should take action to reduce greenhouse-gas emissions?" Sanders didn't ask these questions because he had no interest in discussing climate policy, where his own ideas make no sense (including, for instance, banning nuclear power and "bringing climate deniers to justice"). His position rests on the fiction that scientists unanimously agree, and that is where he must make his stand.

Pruitt's emphasis on the difficulty of measuring, "with precision, the degree of human activity's impact" also crosses a red line for activists, because the precision with which climate models can describe what *is* happening links directly to the precision with which they can describe what *will* happen. If scientists do not know exactly how the climate system is behaving now, we might accord less weight to their projections into the distant future.

Secretary of State Rex Tillerson hit that tripwire in his own confirmation hearing when he said: "The increase in the greenhouse-gas concentrations in the atmosphere and [] having an effect; our ability to predict that effect is very limited." Professor Katharine Hayhoe mocked the claim, suggesting that perhaps it would have been correct in the 1800s. "In 2017? Not so much." Professor Michael Mann called it "indefensible." In the *Guardian*, Dana Nuccitelli concluded, "Functionally [Tillerson] might not be very different than a Secretary of State who outright denies climate change." *Mashable*'s Andrew Freedman warned that Tillerson, Pruitt, and fellow Trump nominee Rick Perry had "moved from outright climate denial to a more subtle, insidious and risky form."

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But as the IPCC emphasizes, the range for future projections remains enormous. The central question is "climate sensitivity"—the amount of warming that accompanies a doubling of carbon dioxide in the atmosphere. As of its Fifth Assessment Report in 2013, the IPCC could estimate only that this sensitivity is somewhere between 1.5 and 4.5°C. Nor is science narrowing that range. The 2013 assessment actually widened it on the low end, from a 2.0–4.5°C range in the prior assessment. And remember, for any specific level of warming, forecasts vary widely on the subsequent environmental and economic implications.

At least one might assume that reasonable minds could be allowed to differ on the ultimate question of how well society is likely to cope with the effects of climate change—a political, social, and economic question several degrees removed from anything resembling a scientific consensus. Not so. I addressed these issues in a recent *Foreign Affairs* essay, in which I called the IPCC "the gold-standard summary," cited it repeatedly, and adopted its estimate that temperatures could rise by 3 to 4°C this century. My essay further embraced the Obama administration's "Social Cost of Car bon" analysis and adopted its high-case model for economic cost. But the essay argued that the likely impact of all this was "manageable" rather than "catastrophic."

read the quotes discovered that most of them raised no issues with climate science at all.

In early March, Davenport tried calling Trump appointees "skeptics," rather than "deniers." But Gillis summarized her story, headlined "EPA Head Stacks Agency with Climate Change Skeptics," in a tweet as "Top posts at EPA are being stocked with climate-change denialists." He then acknowledged that the conflicting word choices were no accident and that the *Times* "cannot seem to achieve internal consistency about what word to use, despite best efforts." That was awkward, though not as awkward as Professor Michael Mann's testimony before the House Science Committee later that month: "I don't believe I called anybody here a denier," he asserted, "yet that's been stated over and over again. So I've been misrepresented quite a bit today." To which Professor Judith Curry, sitting just to his right, responded, "It's in your written testimony." Sure enough, on page 6, Mann referred to "climate science denier Judith Curry," even averring, "I use the term carefully."

Activists, so eager to bar the gates to the public square and keep their opponents out, have instead locked themselves in. If everyone agrees with the 97 percent consensus, and that consensus does not dictate any particular policy outcome, they have

The president should clean up the embarrassing ambiguity and vacuity in his own views. And his administration should make clear that it works from mainstream scientific conclusions.

Mann decried it as "#Koch climate denial propaganda." Eric Holthaus, mete orologist and host of the podcast *Our Warm Regards*, called it "a master class in modern climate denial."

THE scope of viewpoints that constitute "denial" is rapidly expanding to swallow all opposition to favored climate policies. In *Scientific American*, blogger Peter Dykstra declared "grudgingly admitting the problem while scrambling to avoid addressing it" to be a form of climate denial. Writing in *Rolling Stone*, Bill McKibben pathetically attempted to introduce the term "Renewables Denial" ("at least as ugly and insidious as its twin sister, Climate Denial") to describe skepticism that wind and solar power can meet the world's energy needs anytime soon.

At stake are the boundaries of debate in our democratic society, on an issue that the self-appointed enforcers insist is the most important one facing us. The ad hominem "denier" criticism places arguments and their purveyors beyond the pale, unworthy of response. Appealing to a purported "97 percent consensus" asserts that the question has been scientifically answered and policymakers have no business debating it. Such rhetorical techniques are wildly inappropriate where science is in fact, by its own admission, not settled, and especially where science is but one input to a difficult policy question.

Fortunately, this nonsense is unsustainable. The *Times* tried letting people speak for themselves, introducing quotes from twelve of Trump's Cabinet nominees with the summary: "Most of the people President-elect Donald J. Trump has chosen for the top tiers of his administration have expressed doubt that climate change is caused by human activity." But anyone who actually

nothing else to say. Perhaps this is for the best. If the extremists from both sides become sufficiently marginalized, a reasoned policy debate might emerge about the real risks of climate change and the cost-effective responses. This would require the media to admit that their "denier" terminology has lost all meaning and to attend equally to the scientifically unsupported statements from both sides.

It would also require a consistent, scientifically accurate message from the White House. The president should clean up the embarrassing ambiguity and vacuity in his own views. And his administration should make clear that it works from mainstream scientific conclusions. EPA Administrator Pruitt confused matters greatly with comments to CNBC last month that went beyond his testimony about "precision" and "debate" and suggested that human activity was not the primary cause of recent warming. Pruitt had no basis for taking that position, nor does he gain anything from it; even Fox News confronted him. Conversely, an accurate statement of the science would only strengthen his position in defending the policies he seeks to implement. The more he focuses discussion on costs and benefits of EPA actions, the more reasonable he will seem—and the more reasonable he will be.

For now, though, navigating the climate debate will require translating the phrase "climate denier" to mean "anyone unsympathetic to the most aggressive activists' claims." This apparently includes anyone who acknowledges meaningful uncertainty in climate models, adopts a less-than-catastrophic outlook about the consequences of future warming, or opposes any facet of the activist policy agenda. The activists will be identifiable as the small group continuing to shout "De ni er!"; the "deniers" will be identifiable as everyone else. NR

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Goodbye to Paris

The sin of being honest.

By Oren Cass

A u i te ded cR seTue ce Rf Preside t TrumS's Paris AccRrd i decisiR has bee e SRsure Rf the agreeme t's u derl i g fraud. The activists a d G□leaders beseechi g him desSeratel tR remai begged the TuestiR □What sRrt Rf climate club wRuld wa t a member whR calls its tRSic a "hRa " a d flatl rejects its SRlic SrescriStiR s? O e whRse Srimar SurSRse is gRRd fRRd a d cR versatiR , Rt a substa tive i ter atiR al resSR se tR climate cha ge.

PrRSR e ts R ce argued the had built sRmethi g imSRsi g—"the e duri g framewRrk the wRrld eeds tR sRlve the climate crisis," as Preside t Obama described it, with "bRld" a d "ambitiRus" targets. But the SrRsSect Rf the Tuee bee leavi g the table SrRmSted assura ces that SarticiSatiR is reall Ri cR ve ie ce at all. Please, Mr. TrumS, just sta fRr dessert□

This revised view is clRser tR the truth. The AccRrd was dRRmed befRre egRtiatRrs ever assembled fRr ShRtRgraShs i December □□□□. The were Rt there tR cRmmit each cRu tr tR mea i gful gree hRuse-gas reductiR s□rather, ever R e submitted their vRlu tar Sledges i adva ce, a d all were acceSted withRut scruti . Pledges did Rt have tR me tiR emissiR s levels, Rr were there Se alties fRr falli g shRrt. The cR fere ce itself was, i esse ce, a staSli g e ercise.

Celebrati g the success Rf this cRllatiR cRalitiR , Secretar Rf State JRh Kerr claimed that "□□□ atiR s i the wRrld came tRgether tR submit a Sla , all Rf them reduci g their emissiR s." That was Rt true. I fact, mRst Rf the majRr develRSi g cRu tries, whRse emissiR s will drive climate cha ge this ce tur , Sledged R l tR cR ti ue with busi ess as usual.

Chi a cRmmitted tR begi reduci g emissiR s b □□□□, rRughl whe its ecR Rmic develRSme t wRuld have caused this tR haSSe regardless. I dia made R emissiR s cRmmitme t, Sledgi g R l tR make SrRgress R efficie c —at half the rate it had SrRgressed i rece t ears. Pakista Rutdid the rest, submitti g a si gle Sage that Rffered tR "reduce its emissiR s after reachi g Seak levels tR the e te t SRssible." This is a defi itiR Rf the wRrd "Seak," Rt a cRmmitme t.

Si ce the , the farce has SrRceeded as farces dR Secretar Kerr claimed the AccRrd wRuld u leash clea - e erg i vestme t. "It is gRi g tR mRve the marketSlace," he said, calli g it "a break-awa agreeme t which actuall cha ges the Saradigm" a d will "sSur massive i vestme t." I stead, glRbal i vestme t Slummeted b □□Serce t i □□□□cRmSared tR □□□□, accRrdi g tR BlRRmberg New E erg Fi a ce. The first Tuarter Rf □□□□ saw a Rther □□Serce t decli e versus □□□□.

The vRlu teer Sledges have cRmma ded Srecisel the resSect the deserve. A ASril reSRrt b *Transport Environment* fRu d R l three EurRSea cRu tries Sursui g SRlicies i li e with their Paris cRmmitme ts a d R e Rf thRse, Germa , has Rw see twR straight ears Rf emissiR s *increases*. The PhiliSSi es has Rutright re Ru ced its cRmmitme t. A stud Sublished b the America GeRSh sical U iR war s that I dia's Sla ed cRal-Sla t cR structiR is i cRmSatible with its Rw targets. All this behaviRr is sRciall acceStable amR gst the climate crRwd. O l TrumS's SresumStiR that the agreeme t mea s sRmethi g, a d that cRu tries shRuld be fRrthright abRut their cRmmitme ts, is be R d the Sale.

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wRuld R l stre gthe their cRmmitme ts. But rather tha see the cRcktail hRur i terruSted, eve that last vestige Rf substa ce was flu g RverbRard.

SR shRuld the U.S. have sta ed Rr gR e? TR TuRte a Rther Rf Preside t Obama's secretaries Rf state "What differe ce, at this SRi t, dRes it make?" FRr the climate, Rt much Rf R e. The Massachusetts I stitute Rf Tech RlRg 's assessme t Rf the agreeme t fRu d that eve full cRmSlia ce wRuld R l have reduced glRbal temSeratures i b R l degrees Celsius.

I stead, the debate devRlved i tR the ki d R e Rtherwise hears abRut the UN Huma Rights CRu cil, a fRrum R R e mistakes fRr a seriRus effRrt tR adva ce huma rights. If Rther cRu tries are gRi g tR sit arRu d discussi g the climate, shRuld 't we at least atte d? This is what Mille ials might call the "FOMO" Fear Rf Missi g Out defe se.

Further, as Ster argued, "withdrawi g frRm the Paris agreeme t wRuld be a stai R the legacies Rf bRth the Sreside t a d Secretar Rf State." Other cRu tries "wRuld see withdrawal as a slaS i the face." But R which Sreside t's legac is Paris a stai ? The CR stitutiR reTuires the Se ate tR ratif treaties b a twR-thirds suSermajRrit i Sart tR e sure that the U ited States sSeaks with a si gle, cR siste t vRice R the i ter atiR al stage. It was Preside t Obama whR Rffered the wRrld a u wise cRmmitme t fRr which he gRt Rthi g i retur . It was Obama whR refused tR submit that cRmmitme t fRr Se ate aSSrRval because he *knew* he did Rt have it.

TrumS ca reverse his SredecessRr's mistake. Withdrawi g frRm the AccRrd thrRugh a Se ate vRte wRuld make clear that Obama shRuld ever have sig ed i the first Slace. It wRuld establish the Srecede t fRr seeki g Se ate aSSrRval Rf a such cRmmitme ts i the future. A d if, R behalf Rf Rur cR stitutiR al reSublic a d cRmmR se se, we i sult Rther Sart gRers? PerhaSs we ca se d a card.

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CITY JOURNAL

EYE ON THE NEWS

We'll Never Have Paris

The climate change agreement was designed as a feel-good, do-nothing program.

Oren Cass
June 1, 2017

Even before President Trump had completed his announcement that the United States would withdraw from the Paris Accord on climate change, howls of disbelief and outrage went up from proponents of the agreement. But the critical dynamic underlying the 2015 Accord, willfully ignored by its advocates, is that major developing countries offered "commitments" for emissions reduction that only mirrored their economies' existing trajectories. Thus, for instance, China committed to reaching peak emissions by 2030—in line with the Lawrence Berkeley National Laboratory's prior analysis. India committed to improving its emissions per unit of GDP—at a rate slower than that metric was already improving. President Obama, meanwhile, pledged America to concrete and aggressive emissions cuts that would require genuine and costly change.

As I wrote in National Review at the conclusion of the Paris conference in December 2015:

> The full scope of the catastrophe will emerge only in the years to come. One of the agreement's few binding provisions is a requirement for countries to gather and review their commitments and their adherence to them every five years. Given the caliber of the pledges, that promise of review has little value; countries that promised to proceed on their existing trajectories will pass with flying colors. But the United States, whose commitments far exceed what even the aggressive Obama agenda is expected to produce, will be the nation off track.

Sure enough, a recent headline from Inside Climate News blares, "China, India to Reach Climate Goals Years Early, as U.S. Likely to Fall Far Short." That is, China and India are

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reaching the "goal" of proceeding along their unaltered course, while the U.S. is "falling short" of a very high bar.

One might think this prima facie evidence of the agreement's folly, but Jonathan Chait of New York magazine instead links to it as proof that the Right's criticism of Paris "has proven incontrovertibly false." Citing data from Climate Action Tracker, he avers that "India, which had promised to reduce the emissions intensity of its economy by 33–35 percent by 2030, is now on track to reduce it by 42–45 percent by that date. China promised its total emissions would peak by 2030—an ambitious goal for a rapidly industrializing economy. It is running at least a decade ahead of that goal." Chait concludes, "The factual predicate upon which the American right based its opposition to Paris has melted away beneath its feet."

However, Climate Action Tracker's own analysis of India's Paris commitment in December 2015 determined, "according to our analysis, with the policies it already has in place, India will achieve an emissions intensity reduction of around 41.5% below 2005 levels by 2030." India committed to less than business-as-usual, has proceeded with business-as-usual, and now wins applause from Chait for beating its worthless commitment. It's easy to slim down to 180 pounds, if you weigh 175 to begin with.

Likewise, in December 2015, it was Climate Action Tracker's view that "under a scenario with currently implemented policies, Chinese CO_2 emissions are likely to peak around 2025." The New York Times reports that Chinese emissions may have peaked in 2014, just as the nation's leaders were formulating their international pledge. Is it more likely that the Chinese inadvertently made a pledge they could meet without trying, or that Chait has fallen for a pledge that was formulated such that it would have to be met?

The giveaway for the Paris charade is the refusal to set baselines. If nations are to hold one another accountable for progress on greenhouse-gas emissions, surely they must agree on a starting point from which to progress. Yet the framework for Paris pointedly omitted this requirement. Countries could calculate their own baselines however they chose, or provide none at all. Now, per Chait, the pledges have themselves become baselines, and each country receives applause or condemnation in inverse proportion to its seriousness.

Even failing on one's commitment is acceptable, so long as the right things get said. Carbon Market Watch reports that "despite all of the fanfare that went on at the time, it seems that there are currently only three European Union countries pursuing climate

policies that put them in line with the agreements made at the Paris Climate Change Talks." Angela Merkel said that she finds the G7's discussion of climate change "very difficult," but not because her nation's emissions have risen the last two years. Her difficulty arises from those ugly Americans' unwillingness to keep up appearances.

Later this week, we will be treated to the spectacle of "a statement backed by all 28 EU states, [in which] the European Union and China will commit to full implementation of the Paris Climate Agreement"—undoubtedly accompanied by lamentations that the United States has disrupted the charade by walking off stage. How the world misses President Obama's enthusiasm for a debating society that delivers no substantive action, or even a useful framework for assessing results, only a forum for bashing America. Such nerve, our nation has, to excuse itself from that pastime.

Oren Cass is a senior fellow at the Manhattan Institute.

Photo by Spencer Platt / Getty Images

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NATIONAL REVIEW

Don't Apologize for Being Honest about Climate Change

A response to Ross Douthat's lukewarm lukewarmism

By Oren Cass — June 5, 2017

Writing about climate change in the *New York Times*, Ross Douthat describes "lukewarmers" as those who:

> accept that the earth is warming and that our civilization's ample CO2 emissions are a major cause. They doubt, however, that climate change represents a crisis unique among the varied challenges we face, or that the global regulatory schemes advanced to deal with it will work as advertised. And they raise an eyebrow at the contrast between the apocalyptic, absolutist rhetoric with which these schemes are regularly defended and their actual details, which seem mostly designed to enable the globe's statesmen to greenwash the pursuit of economic and political self-interest.

Douthat placed himself among the lukewarmers and very graciously referred his readers to some of my recent work for a longer discussion of those themes. But his column was also quite gracious in conceding two problems with lukewarmism, which instead deserve rebuttal.

Douthat's Problem #1: "No less than alarmism, lukewarmism can be vulnerable to cherry-picking and selection bias, reaching for any piece of evidence — and when you're dealing with long-term trends, there's a lot of evidence to choose from — that supports its non-catastrophic assumptions, even if the bulk of the data starts to point the other way."

This is a generic critique that might apply to any position on any issue. School-choice advocacy is vulnerable to cherry-picking and selection bias, as is support for universal pre-K. So are the claims that Scandinavian-style welfare states are good or bad for innovation and economic growth. And the claims that an interventionist U.S. foreign policy promotes or harms our national interest. Highlighting such a complaint about lukewarmism would make sense only if the position were uniquely reliant on such bad behavior.

17cv01906 Sierra Club v. EPA ED_001523_00005694-00001

To the contrary, the key hypothesis (of my work, anyway) is that *even working from the mainstream scientific and economic studies advanced by alarmists*, the data do not support a conclusion of catastrophe. That is, the effects identified by the U.N.'s Intergovernmental Panel on Climate Change are serious but manageable. The economic costs identified by the Obama administration's Social Cost of Carbon analysis are no larger than those associated with a variety of other policy issues.

Of course, plenty of people cherry-pick this or that study in an effort to undermine the mainstream conclusions of climate science. But such analysis is unnecessary to a moderate view of climate change and, I would argue, often counterproductive. Lukewarmism is, or should be, about describing accurately the mainstream of climate research and then assessing how well human society's resilience and capacity for adaptation will allow it to cope with the challenges we might face.

Douthat's Problem #2: "While lukewarmers may fancy ourselves serious interlocutors for liberals, we're actually just running interference on behalf of know-nothing and do-nothingism, attacking flawed policies on behalf of a Republican Party that will never, ever advance any policies of its own."

This mistakes an argument about the nature of the climate problem for one about the ideal solution. Lukewarmism is an effort to provide much needed perspective and context on the climate debate. Importantly, it is a *corrective* to the outlandish claims of catastrophe, made by environmental activists, that bear no relationship to mainstream research — they can hardly complain that others are taking the time to point this out. If we want the public to interpret correctly the implications of climate change, the correct interpretation should be given a vigorous defense. Insisting that policy deliberations begin from an appropriate policy definition does not worsen the quality of those deliberations and is not "running interference."

Further, climate policies are typically flawed in ways that remain obvious regardless of how seriously one takes climate change. Obama's Clean Power Plan was costly, it was an illegitimate expansion of federal power, and it would not have materially affected global temperatures. The Paris Agreement was an absurd piece of political theater that disadvantaged the United States and endorsed the developing world's refusal to take serious climate action. These observations hold equally well if one is ice cold, lukewarm, or boiling mad.

But sometimes a firm grasp of the problem matters a lot, and then the lukewarmer's obligation is to apply his conclusions honestly. If someone proposes truly radical solutions that might avert climate change at unfathomable cost, lukewarmers should decry the overreaction. Likewise, if someone rejects sensible policies that have concrete benefits by rejecting any cause for concern,

lukewarmers should insist they be serious. As I wrote for Fox News when Trump signed his executive order on the topic, "Trump Is Wrong on Climate Change":

> We should want government planners at every level to take the best existing research into account as they make public investments and set policy that will influence others. If farmers and resort owners and mayors and naval planners all build with an eye toward how the future might change, then those changes as they arrive won't be so harmful or expensive.
>
> Yet, in addition to starting the repeal of costly mitigation efforts like Obama's Clean Power Plan, Trump's executive order entirely erases an Obama order aimed at "preparing the United States for the impacts of Climate Change." Many of the points in that program still make sense. Perhaps the greatest mistake made by those who overinflate the risk of climate change is to forget that our society has a tremendous capacity to adapt and innovate. But it would also be a major mistake to forget that public policy can either foster or hinder that process.

Certainly, that's no comprehensive agenda. But it is a message that the politicians and policymakers of both parties would benefit from hearing.

READ MORE:
The Fanatical Prophet of Climate-Change Doom
Bill Nye's Embarrassing Face-Off on Climate Change
A Top Climate Scientist Blows the Whistle on on Shoddy Climate Science

— *Oren Cass is a senior fellow at the Manhattan Institute.*

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From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with ConocoPhillips
Start Date/Time: Tue 3/21/2017 5:00:00 PM
End Date/Time: Tue 3/21/2017 5:45:00 PM

Notes:

Directions: Please use the William Jefferson Clinton **North Entrance located on your right** as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact:

Kevin J. Avery

Manager, Federal Government Affairs

ConocoPhillips

325 7th Street, N.W., 12th Floor

Washington, D.C. 20004

202-833-0914 (Direct)

202-304-0467 (Mobile)

From: Kime, Robin
Location: ISRI: 1250 H Street, NW, Suite 400
Importance: Normal
Subject: Samantha to Attend the ISRI CEO Meeting (10:00 - 10:30)
Start Date/Time: Wed 6/21/2017 2:00:00 PM
End Date/Time: Wed 6/21/2017 2:30:00 PM
facts-and-figures-fact-sheet---recycling.pdf
ISRI Comments EPA Reg Reform 170515.pdf

ISRI is hosting a briefing for our 10 largest company's senior management (CEO, President) to better understand what is happening in Washington at the Congressional and agency levels. These companies primarily process ferrous (steel) and non-Ferrous (copper, brass, aluminum, etc.) metals. However, ISRI represents companies that process other materials such as plastics, paper, rubber, electronics, and textiles. Background material are attached.

Samantha will plan to join the meeting at 10:00 a.m. and give some overview remarks about EPA's work (5-8 minutes) followed by Qs and As.

The meeting will be held at ISRI's offices at 1250 H Street, NW, Suite 400. Building security will have her name in advance and someone will meet her upon her arrival.

We will have approximately 10-12 company representatives and ISRI officers (tentative list below), 4-5 ISRI staff plus Governor Haley Barbour and 1-2 BGR staff.

ALTER TRADING

Jay Robinovitz, President & CEO

Michael Goldstein, Operations

COMMERCIAL METALS COMPANY AMERICAS

Brian Halloran, Director of Recycling

MANITOBA CORP.

Brain Shine, President and ISRI Chair -Elect

MITSUI STEEL

Hidemi Takani, *General Manager, Ferrous Raw Materials Division*

Masaya Inamuro, Sr VP, Mineral & Metal Resources Division

SA RECYCLING

George Adams, CEO

SCHNITZER STEEL INDUSTRIES, INC.

Tamara Lundgren, CEO & President

SIMS METAL MANAGEMENT

Galdino Claro, CEO

William "Bill" Schmiedel, President

UTAH METAL WORKS

Mark Lewon, President and ISRI Chair

William H. Johnson

Chief Lobbyist

1250 H Street, NW

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Washington, DC 20005

(202) 662-8548 - direct

(202) 714-4259 - cell

Recycling goes far, far beyond the bin

U.S. Economy

	2010	2015
Industry Size	$77 Billion	$106 Billion
Employment (Yearly Average)	107,000	149,000
Volume of Scrap Material Annually Processed (Metric Tons)		
Iron and Steel	66,000,000	67,000,000
Paper	46,800,000	47,210,000
Aluminum	4,600,000	5,014,000
Copper	1,900,000	1,784,000
Lead	1,200,000	1,166,000
Zinc	160,000	120,000
Plastic (bottles)	655,000 (2009)	634,000 (2014)
Electronics	3,500,000	$5 Million+ (est)
Tires (# of tires)	90,000,000	122,000,000

Environment

Scrap recycling reduces greenhouse gas emissions by requiring significantly less energy to manufacture products from recyclables than virgin materials and by avoiding landfilling.

Energy saved using recycled materials is up to:

92% for aluminum	90% for copper	87% for plastic
68% for paper	56% for steel	34% for glass

Scrap recycling conserves natural resources.

Recycling one ton of:

- Paper saves 3.3 cubic yards of landfill.
- Steel conserves 2,500 lbs. of iron ore, 1,400 lbs. of coal, and 120 lbs. of limetsone.
- Aluminum conserves more than 4 metric tons of bauxite ore.

Cleaner air and water result from safely removing potentially hazardous materials and keeping them out of landfills:

- Mercury switches removed from older automobiles
- Lead recovered from computer monitors

Sources: ISRI, AF&OA, International Aluminum Institute, U.S. EPA, SRI, USITC, USGS.

Global Trends

	2010	2015
Value of Scrap Commodities Exported Helping U.S. Trade Balances	$29.6 Billion	$17.5 Billion
Metric Tons of Scrap Exported Including:	45.3 Million	37 Million
Iron and Steel	18.7 Million	11.7 Million
Paper	18.9 Million	19.6 Million
Aluminum	1.9 Million	1.6 Million
Plastic	2.0 Million	2 Million
Nickel, Stainless, and Alloy	1.9 Million	1.1 Million
Copper	1.0 Million	954,000
Lead	44,000	46,000
Zinc	78,000	55,000
Rubber	172,000	83,000
Number of Countries Scrap was Exported to and Leading Destinations / Value	158 Countries	156 Countries
China	$8.5 Billion	$6 Billion
Canada	$3.0 Billion	$2 Billion
South Korea	$1.7 Billion	$960 Million
Mexico	$1.0 Billion	$955 Million
Turkey	$1.5 Billion	$932 Million
India	$0.8 Billion	$914 Million
Switzerland	-	$844 Million
United Kingdom	$1.1 Billion	$653 Million
Germany	$0.7 Billion	$612 Million
Taiwan	$1.4 Billion	$597 Million
Italy	$0.7 Billion	$549 Million
Japan	$0.6 Billion	$539 Million

ISRI Institute of Scrap Recycling Industries, Inc.
Voice of the Recycling Industry™

Visit us at www.isri.org, find us on and at Institute of Scrap Recycling Industries, Inc., and follow us on @isri

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Via electronic mail

May 15, 2017

Samantha K. Dravis, Associate Administrator, Office of Policy
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Mail Code 1803A
Washington, DC 20460

Re: Evaluation of Existing Regulations (EPA–HQ–OA–2017–0190)

Dear Ms. Dravis,

The Institute of Scrap Recycling Industries, Inc. (ISRI)[1] is pleased to submit these comments on behalf of the US-based scrap recycling industry, in response to the U.S. Environmental Protection Agency's (EPA's) notice for public comment on *Evaluation of Existing Regulations* (EPA–HQ–OA–2017–0190, 82 Fed. Reg. 17793, April 13, 2017) in support of President Trump's Executive Order 13777, "Enforcing the Regulatory Reform Agenda." With a total economic impact in the United States of nearly $117 billion and employment of more than 530,000 Americans, the recycling industry is a vital part of the U.S economy. However, the U.S.-based scrap recycling industry's significant contributions to both environmental stewardship and the country's economic strength are dependent upon government policies that understand and recognize these benefits and that promote their growth. It is with this in mind that ISRI provides these comments, identifying the following regulations that have negatively impeded the continued growth of the industry and are in need of repeal, replacement, or modification:

- **Modification of Subtitles C & D of the Resource Conservation and Recovery Act (RCRA)** to distinguish scrap commodities destined for recycling from waste destined for disposal. The current regulatory deficiencies within 40 CFR §§261.2, 261.4, and 239-259 allow commodity

[1] ISRI is the "Voice of the Recycling Industry," promoting safe, economically sustainable and environmentally responsible recycling through networking, advocacy, and education. With headquarters in Washington, DC and 21 chapters nationwide, ISRI represents the more than 1,200 companies operating in nearly 3,000 locations in the U.S. and 34 countries worldwide that process, broker, and consume scrap commodities, including metals, paper, plastics, glass, rubber, electronics, and textiles.

materials destined for recycling to be inappropriately regulated as solid or hazardous waste at the federal, states, and local levels, adding additional costs and burdens on the recycling industry. EPA should revise these regulations to free scrap commodities destined for recycling from solid waste completely, and provide associated guidance to its regional offices and states.

- **The Federal Multi-Sector General Permit (MSGP), developed pursuant to the Clean Water Act (CWA) regulations at 40 CFR §122,** contains provisions, specifically benchmark monitoring, that make achieving compliance uncertain and, at best, difficult. This uncertainty and difficulty leads to repeated cycles of monitoring, exceedances, and corrective actions and effectively encourage frivolous and costly CWA third-party lawsuits. EPA needs to revise the MSGP to account better for the unique characteristics of stormwater and to align benchmark monitoring better with the performance potential of control measures and wet-weather conditions.

- **The refrigerant management regulations at 40 CFR §82, Subpart F, pursuant to Title VI of the Clean Air Act (CAA),** need to be revised to require removal of refrigerant from appliances and vehicles **prior** to their delivery for recycling, consistent with the specific language of § 608(b)(1) of the Clean Air Act Amendments of 1990. As currently written, the regulations place the burden of enforcement on recyclers who accept appliances and vehicles for recycling, contrary to the express language and intent of the CAA, thus imposing significant liability, compliance, and enforcement burdens on such recyclers. EPA needs to revise the 40 CFR §82, Subpart F regulations so that they follow what Congress specifically directed the Agency to do when drafting the implementing regulations to the CAA Amendments, **requiring prior removal** of refrigerant from appliances and vehicles delivered for recycling to remove these burdens from recyclers.

- **The Chemical Data Reporting (CDR) regulations at 40 CFR §711, pursuant to the Toxic Substances Control Act (TSCA)**, need to be revised to eliminate the current reporting requirements for small annual amounts of scrap metal imported for recycling—12.5 or more tons per metal per facility, a small amount compared to annual production. Such reporting is burdensome and also provides no useful information to EPA. EPA needs to revise the CDR regulations to exempt imported scrap metal from reporting.

- **Elimination of Regulatory Conflicts**. ISRI asks that EPA's Office of Policy exert greater influence on the program offices, including the Office of Land and Emergency Management and Office of Air and Radiation, to communicate among themselves during rulemaking about potential regulatory conflicts or difficulties across the regulations for which they have responsibility. Improving communication across and within the offices will result in better rulemaking and better regulations with fewer unintended negative regulatory consequences.

To provide context for the comments below, ISRI next offers background on the recycling industry.

INDUSTRY BACKGROUND

The recycling industry has long been recognized as one of the world's first green industries, born out of the need to recover and conserve valuable resources. From the earliest of times, people recognized the intrinsic value of recycling and the benefits associated with using and re-using existing materials to create new products. Within the U.S., scrap recycling has a long history, dating back to the late 1600s near Philadelphia where a paper mill began using recycled cotton and fiber to make paper, and to 1776 when Paul Revere advertised for scrap metal of all kinds so that he could manufacture basic metals to help fight the War of Independence.

The modern-day scrap industry traces its roots back to the late 1800s when many of our forebears were "peddlers," collecting all types of scrap via pushcarts. The industry has evolved dramatically since then, such that it now utilizes sophisticated machinery and technology to manufacture specification-grade commodities which are critical elements to the health of domestic, as well as global, manufacturing. In fact, recyclers today are the first link in the manufacturing supply chain, supplying more than 40% of manufacturing's global raw material needs. Last year alone, the U.S.-based scrap recycling industry transformed more than 130 million metric tons of recyclable materials into specification-grade scrap products sold for productive economic use as feedstock materials by industrial consumers in the United States and throughout the world. Those commodities included:

- 67 million metric tons of iron and steel;
- 47.2 million metric tons of paper;
- More than 8 million metric tons of aluminum, copper, and other nonferrous metals;
- More than 5 million tons of electronics;
- More than 3.5 million tons of plastic scrap; and
- More than 122 million tires.

Rising global demand for scrap also provides a useful critical outlet for our excess scrap supply, with between 30 to 40 percent of the scrap processed in the U.S. annually exported to more than 150 countries around the globe. Since the year 2000, net exports of U.S. scrap have made a positive contribution to our balance of trade amounting to more than $210 billion.

Like other manufacturers, scrap recyclers create jobs, contribute to the tax base, and improve the balance of trade. However, unlike most manufacturers, the work of scrap recyclers also inherently benefits the environment and helps prevent what would otherwise become solid waste problems.

COMMENTS

ISRI requests that EPA review and revise the following regulations promulgated pursuant to the Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), the Clean Air Act (CAA), and the Toxic Substances Control Act (TSCA), for the reasons specified below.

1. The Subtitle D (Solid Waste) and Subtitle C (Hazardous Waste) Regulations Pursuant to RCRA Need to Be Revised to Recognize That Scrap Materials Destined for Recycling Are NOT Solid Waste and Should Not be Regulated as Such on the Federal or State Levels

For decades, scrap recycling has been impeded by varying and evolving interpretations of "solid waste" under RCRA Subtitle D (solid waste), especially at the state and local levels, and under RCRA Subtitle C (hazardous waste). Such interpretations have inappropriately regulated scrap materials destined for recycling as solid or hazardous waste and recycling facilities as solid or hazardous waste facilities, layering costly, burdensome and inappropriate requirements on the recycling industry.

Scrap commodities that are "destined for recycling"[2] should not be defined as "solid waste" under RCRA Subtitle D or RCRA Subtitle C, and the recycling facilities that process such products destined for recycling should not be considered solid or hazardous waste facilities.

Currently, the Subtitle C Definition of Solid Waste at 40 CFR §261.2 (DSW) and its Exclusions at 40 CFR §261.4, recognize that recycled processed, home, and prompt scrap metal are outside and excluded from the definition of solid waste, but do not recognize that unprocessed scrap metal destined for recycling is outside the solid waste definition (§261.2) or excluded from it (§261.4). Unprocessed scrap metal that is recycled is technically a solid or hazardous waste but exempted from Subtitle C regulation at 40 CFR §261.6(a)(3)(ii)[3]. While this situation is tolerable, unprocessed scrap metal destined for recycling should be outside and excluded from DSW on its merits, just as recycled processed, home, and prompt scrap metal are.

Most significantly, even if all scrap metal destined for recycling were outside or excluded from DSW under Subtitle C, they are not also automatically outside or excluded from statute-based definition(s) of solid waste under Subtitle D. In addition, nonhazardous nonmetallic scrap commodities that are recycled – including recovered fiber/scrap paper, scrap plastics, scrap textiles, scrap glass, and scrap rubber –

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[2] While the EPA has stated that "[t]he statute and the legislative history suggest that Congress expected EPA to regulate as solid and hazardous wastes **certain** materials that are *destined for recycling*" (72 Fed. Reg. 14176; emphasis added), ISRI maintains that scrap materials destined for recycling, such as scrap metal, paper, plastics, and glass, are valuable commodities that are not among those "certain materials". "Destined for recycling" means that such scrap materials are always handled in a manner that directs them towards or keeps them in the supply chain for recycled materials and are not at any time solid waste.

[3] An unfortunate aspect of 40 CFR §261.6 is that it declares that "[h]azardous wastes that are recycled will be known as 'recyclable materials'." The term, "recyclable materials", is commonly used to refer to scrap materials. For this reason, 40 CFR §261.6 should be revised to eliminate this declaration and its use of "recyclable materials".

while not subject to RCRA Subtitle C[4] are still subject to RCRA Subtitle D. The persistent misidentification of scrap commodities as solid waste under RCRA Subtitle D has led to continual challenges and misapplications of state and local laws on the recycling industry, adding additional layers of costs and compliance burdens on individual recyclers.

Unlike the RCRA Subtitle C regulations, the RCRA Subtitle D regulations from 40 CFR §239-§259 have neither a process to determine whether a material is solid waste nor any exclusions from solid waste. There is no Subtitle D regulatory language recognizing that scrap commodities destined for recycling are outside of, or excluded from, the statute-based Subtitle D definitions of solid waste at 40 CFR §§243.101 and 246.101, among others. These Subtitle C and Subtitle D regulatory deficiencies allow scrap material destined for recycling to be inappropriately regulated as solid or hazardous waste at the federal, states, and local levels and the facilities handling such scrap material to be regulated as solid or hazardous waste facilities, to the detriment of recycling.

To be clear, recyclable materials (referred to as "scrap" by the recycling industry) are commodities—they are not waste. They are highly valuable and tradeable products, produced according to globally recognized specifications for purchase by industrial consumers—including steel mills, metal refiners, plastic manufacturers, foundries, and paper mills—to meet their raw material needs. Manufacturers value the use of scrap for the significant cost and energy savings provided. Recycled materials are routinely used as substitutes in place of virgin commodities since they are often less expensive, of comparable—if not better—quality, and save energy which are all important factors in in the manufacturing process.

The numbers tell the story…

- U.S. steelmakers rely on iron and steel scrap—processed from items as diverse as automobiles, household appliances, demolished bridges, and old machinery—to make roughly two-thirds of the steel produced in the country every year;
- Recycled copper from items such as old radiators and wire and cable, accounts for more than one-third of total U.S. copper consumption;
- More than half of the U.S. aluminum usage is supplied from soda cans, aluminum siding, and other forms of aluminum scrap; and

[4] "The definition of solid waste contained in this part applies only to wastes that also are hazardous for purposes of the regulations implementing subtitle C of RCRA. For example, it does not apply to materials (such as non-hazardous scrap, paper, textiles, or rubber) that are not otherwise hazardous wastes and that are recycled" (40 CFR §261.1(b)(1)).

- More than half of the paper industry's needs here in the U.S. are met each year through the use of recovered fiber produced from such items as old newspapers, magazines, catalogs, office paper, and used corrugated boxes.

As one can imagine based on these examples – and there are many more – recycling is an important economic engine and very much integral to modern manufacturing. This concept was recognized by the National Lieutenant Governors Association (NLGA) last year when they adopted *A Resolution On The Importance Of Recycling And Distinguishing Recyclable Materials As Valuable Commodities That Are Not Solid Waste*." The Resolution concludes as follows –

> *BE IT FINALLY RESOLVED that the NLGA will be an engaged forum for collaboration among states to pursue SMM that recognizes the importance of recycling and that recyclable materials such as metals, paper, plastic, glass, rubber, and textiles that are recycled directly as a viable commercial feedstock or commodity should not be, deemed to be solid waste.*

EPA itself acknowledged the distinction between scrap commodities and waste materials almost 15 years ago, although not in regulation. In 2003, EPA tasked staff to take a futuristic look at the Agency's work in the year 2020. Out of that effort came the work entitled, *Beyond RCRA*. *Beyond RCRA* makes clear that scrap materials are not waste. Along with the recommendation that the Agency move from materials control to a materials management focus. As such, it was important not to treat recyclables as wastes, but rather manage them for what they are - feedstock for the manufacture of new products. The Agency recognized then that with recycling such materials comes avoidance and concomitant costs of environmental degradation – the Environmental Protection Agency's primary mission.

Although published in 2003 during the Administration of President George W. Bush, *Beyond RCRA* was used by the Obama Administration to jump start a serious Sustainable Material Management (SMM) program. As EPA understood, in 2003 and beyond, that scrap materials are valuable materials and not waste materials there is no reason whatsoever why the Agency should not implement that understanding in 2017. The time has come for EPA to acknowledge in its regulations that scrap is not waste.

As such, it is very important that EPA revise its regulations and clearly recognize the distinction between scrap and waste, and recycling and disposal, within BOTH Subtitle C AND Subtitle D of RCRA. Somewhere within 40 CFR §239-259, EPA needs to recognize that scrap commodities – including scrap metal, paper, plastics, glass, textiles and rubber - destined for recycling are outside of and excluded from, the Subtitle D definitions of solid waste. And, because Subtitle D is largely delegated to state authorities, EPA needs to also provide **clear guidance** associated with these changes to its regional offices and state authorities.

2. The Federal Multi-Sector General Permit, Developed Pursuant to the CWA Regulations at 40 CFR §122, Must Be Revised to Better Account for the Unique Characteristics of Stormwater and to Align Benchmark Monitoring with the Performance Potential of Control Measures and Wet-Weather Conditions.

The Federal Multi-Sector General Permit (MSGP) contains provisions that make achieving compliance uncertain and, in some cases virtually impossible, thus encouraging frivolous and expensive CWA third-party lawsuits. Modelled on CWA wastewater permits, the MSGP uses benchmark monitoring to assess the effectiveness of implemented control measures specified in the MSGP. Concentrations of benchmark constituents (e.g., copper and zinc) measured in grab samples of stormwater discharges are compared to benchmark levels. *EPA has set benchmark levels much closer to dry-weather water quality standards (WQS) for receiving waters (very low) than to stormwater discharge concentrations achievable by control measures under wet-weather conditions*. This is wholly inappropriate because unlike wastewater, stormwater has highly variable flow rates, constituent concentrations, and frequencies of occurrence. Discretely measured constituent concentrations of stormwater discharges may not accurately reflect the effectiveness of implemented control measures or the actual impact of stormwater discharges on the receiving water under wet-weather conditions. *This creates a situation in which the achieving benchmarks is extremely difficult, if not impossible*. It creates a situation such that control measures specified in the MSGP, when implemented, will often be insufficient to meet benchmarks. This difficulty and uncertainty leads to repeated and costly cycles of monitoring, exceedances, and corrective actions with no easy off-ramp from such cycles.

Another problem with the use of benchmark monitoring within the MSGP is that it is viewed by some as an indicator of permit compliance even though it is clearly stated otherwise by EPA; **"[t]*he benchmark concentrations are not effluent limitations; a benchmark exceedance, therefore, is not a permit violation*."** (2015 MSGP §6.2.1). Benchmark exceedances have been used as "evidence" of permit violations in threats of CWA third-party lawsuits against recycling facilities, including those with highly performing stormwater control systems. The currently established benchmark levels effectively invite CWA third-party lawsuits against recyclers, despite EPA's view that a benchmark exceedance is not per se a permit violation. The result has been millions of dollars of costs to recyclers across the country.

Over the years, we have witnessed increased abuse of CWA citizen lawsuits filed for enrichment rather than as the Act originally intended. Many organizations have used publicly available databases to obtain information about regulated facilities and threaten to sue them under the CWA simply to extract sizable financial "donations" and "voluntary" actions from facilities not otherwise required by law to do so. These facilities settle simply to avoid the costs of litigation, while the organizations then use settlement donations to repeat the process on other facilities in a vicious cycle that was not intended by Congress. These groups are taking advantage of the benchmark levels within the MSGP to inappropriately further their efforts.

It is absolutely necessary for the EPA revise the MSGP to account better for the unique characteristics of stormwater and to align benchmark monitoring better with the performance potential of control measures and wet-weather conditions.

3. The Refrigerant Management Regulations Need to Be Revised to Require Removal of Refrigerant from Appliances and Vehicles Prior to Their Delivery for Recycling, as Clearly Mandated in CAA Title VI, so as to Relieve Recyclers from the Compliance, Enforcement, and Liability Burdens of the Current Regulations for Which They Were Never Intended.

The regulations promulgated by EPA in 40 CFR §82 are in direct contradiction of the clear Congressional intent and specific wording found in §608(b)(1) of the Clean Air Act Amendments of 1990, and, as a result impose significant liability, compliance, and enforcement burdens on recyclers who accept for recycling small appliances and vehicles (henceforth, "appliances") that use refrigerants. Contrary to CAA Title VI[5], which calls for removal of refrigerant from appliances **prior to their delivery for recycling**, EPA finalized so called "flexible" regulations more than 20 years ago that ignore the explicit language of the statute and have put the industry in the untenable position as both the "enforcer" and the "enforced" of refrigerant removal from recycled appliances. These regulations continue to be applied and used as enforcement actions against recyclers.

Section 608(b)(1) required EPA to promulgate regulations mandating that all CFC refrigerants "contained in bulk in appliances, machines or other goods [ ] be removed from each appliance, machine or other good prior to the disposal of such items or their delivery for recycling." The law contains two extremely important concepts:

1. That recycling is distinguished from disposal; and
2. That CFC-bearing goods which are being recycled must be evacuated "*prior to their delivery to the recycler*." Congress left no room for interpretation as to who would be responsible for the removal of CFCs from such goods. If the CFCs are to be removed prior to their delivery for recycling it is clearly the last owner of the CFC containing item prior to that delivery who is responsible.

In fact, these words appear in the CAA Amendments of 1990 because of ISRI's success in convincing the Congress that there was no practical way to require scrap recyclers to be responsible for assuring that

[5] "Requirements that class I or class II substances contained in bulk in appliances, machines or other goods shall be removed from each such appliance, machine or other good prior to the disposal of such items or their delivery for recycling" (42 USC §7671g).

CFC refrigerant has been removed. Congress understood that automobiles and appliances delivered to scrap processors frequently don't have the physical shape they had when originally purchased.[6] Congress understood the impracticality of ensuring that each one of thousands of such items handled by processors each day has been properly vented and Congress spoke clearly and precisely on that point.

The regulations promulgated by EPA to implement §608(b)(1) subvert the intent of Congress to insure that refrigerant is recovered upstream of the recycling industry. The statute is quite unambiguous, yet EPA promulgated regulations that put the burden on the recycler to ensure refrigerant recovery occurs. Under these regulations, recyclers must either recover refrigerant from appliances delivered for recycling, which was not a provision of CAA Title VI, or verify via signed statements or contracts that the supplier ensured removal of refrigerant from appliances prior to their delivery for recycling. If a recycler cannot adequately enforce and demonstrate compliance by others (e.g., suppliers of appliances for recycling) through signed statements or contracts, that recycler suffers enforcement for failing to do so. The penalties are potentially large even for relatively minor paperwork violations. A common outcome of enforcement is a settlement with EPA that requires the recycler to implement measures that EPA cannot otherwise require the recycler to conduct under the 40 CFR §82, Subpart F regulations, as well as a substantial monetary payment or expenditure of some kind (e.g., a supplemental environmental project).

Also, once an appliance is accepted at a recycling facility with the refrigerant properly removed, the appliance is still regulated under these regulations until it is completely processed (i.e., shredded or melted). These regulations impede the movement of appliance parts that once held or contained refrigerant during use (e.g., copper coil and steel compressor) because when these parts are further sold, perhaps several times, a signed statement or contract is required between each seller and buyer. This creates a paper trail problem with potentially tremendous compliance and enforcement implications because each buyer is responsible under these regulations for compliance by every supplier (perhaps several) associated with the appliance part and the appliance from which it originated. In such complex recycling networks, this is extremely difficult to do.

To remove these liability, compliance, and enforcement burdens on recyclers, EPA needs to revise the 40 CFR §82, Subpart F regulations to require prior removal of refrigerant from appliances and vehicles delivered for recycling *as Congress originally directed the Agency to do.*

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[6] A recycler will often not receive the product until it has already been crushed or flattened, or otherwise altered for ease and economy in transport. As a result, it is frequently difficult, if not impossible, to inspect the product to determine whether or not CFCs remain.

4. The TSCA Chemical Data Reporting (CDR) Regulations Need to Be Revised to Exempt Scrap Metal Imported for Recycling from Reporting as CDR Imposes Substantial Reporting Burdens on Recycling While Providing No Useful Information to EPA

From 1986 to 2003, TSCA Chemical Data Reporting (CDR) did not apply at all to scrap metal recycling because inorganic chemical substances (e.g., elemental metals) were exempted from CDR requirements. In addition, as scrap metal recycling does not involve any chemical reactions—only physical changes in the state, shape, size, or aggregation of scrap metal— it would not be considered manufacturing for CDR purposes in any case.

The 2003 TSCA CDR Amendments (68 Fed. Reg. 848-906) changed that situation by its removal of the reporting exemption for inorganic chemical substances. The TSCA Chemical Substance Inventory lists every metal element, so scrap metal became a potentially reportable substance by way of its individual metals. While recycling scrap metal does not constitute manufacturing for CDR purposes, importing scrap metal for recycling does because the CDR definition of "manufacture" also includes importing. Scrap recyclers suddenly had a potential reporting obligation under CDR if they imported scrap metal for recycling, even from Mexico or Canada.

As a result, recyclers find themselves in the strange situation under CDR that reporting is not required for recycling domestic scrap metal, but is required for importing scrap metal for recycling above the applicable annual facility threshold of 25,000 pounds (12.5 tons) per elemental metal. For the recycling industry, a threshold of 12.5 tons is essentially zero because 12.5 tons represents a miniscule amount of annual production. This threshold can be exceeded in just one day. Reporting because of only one day of importing activity makes no sense and would not provide any useful information. However, the burden of reporting such imported scrap metal is not insignificant, and neither is the consequence for failure to report.

Any recycler importing scrap metal is very likely going to have a reporting obligation under CDR, even if such importing represents a small amount of annual production. The current CDR exemption for a "small manufacturer" (40 CFR §711.9) does not provide complete or any relief from reporting because this exemption does not often apply[7].

EPA needs to revise the CDR regulations to exempt imported scrap metal for recycling from reporting requirements, especially given that no reporting is required for recycling domestic scrap metal that is processed in exactly the same way as imported scrap metal.

This same argument for a CDR exemption applies as well as to imported inorganic ingredients that are used in making alloys by mixing them with metals in the molten state without chemical reaction.

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[7] Earlier this year, in comments submitted on Standards for Small Manufacturers and Processors (EPA-HQ-OPPT-2016-0675), ISRI noted that the small manufacturer exemption does not provide much relief for CDR requirements.

5. EPA's Office of Policy Needs to Communicate and Coordinate the Regulatory Activities Within EPA Better to Reduce Regulatory Conflicts and Difficulties Before they are Codified, and Correct Those Conflicts that Currently Exist

ISRI would also like to note the following regulatory conflicts related to the 40 CFR §82, Subpart F regulations to illustrate the general problem of regulatory conflict between regulations issued under different (or even the same) statute.

- The CAA Title VI definition of "disposal" at 40 CFR §82.152[8] is partly inconsistent with the RCRA Subtitle C definition of "disposal" at 40 CFR §260.10[9]. While part of the CAA definition is consistent with the RCRA definition, the CAA definition of "disposal" also includes reuse of appliance parts and recycling of appliances. Reuse and recycling are consistent the RCRA Subtitle C definition of "recycled" at 40 CFR §261.1(c)(7)[10]. This CAA definition is unnecessarily inconsistent with the RCRA definition and creates unnecessary regulatory and even enforcement confusion.

- The CAA Title VI exemption from venting prohibition at 40 CFR §82.154(a) for certain hydrocarbon substances (e.g., propane and isobutane) from certain appliances is potentially severely limited by the RCRA Subtitle C regulations and state CAA regulations. Venting flammable substances may be hazardous waste disposal under the RCRA Subtitle C regulations and may cause exceedances of applicable CAA limits on emissions of volatile organic compounds. These venting exemptions were apparently offered without adequate consideration of other potentially applicable and impeding regulations.

- Under the CAA Title VI regulations, 40 CFR §82, Subpart F covers refrigerant management in appliances, and 40 CFR §82, Subpart G, Significant New Alternatives Policy Program, covers the process of approving refrigerants for use in appliances. ISRI's casual observation is that the

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[8] Disposal means the process leading to and including:
(1) The discharge, deposit, dumping or placing of any discarded appliance into or on any land or water;
(2) The disassembly of any appliance for discharge, deposit, dumping or placing of its discarded component parts into or on any land or water;
(3) The vandalism of any appliance such that the refrigerant is released into the environment or would be released into the environment if it had not been recovered prior to the destructive activity;
(4) The disassembly of any appliance for reuse of its component parts; or
(5) The recycling of any appliance for scrap.

[9] *Disposal* means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.
[10] A material is "recycled" if it is used, reused, or reclaimed.

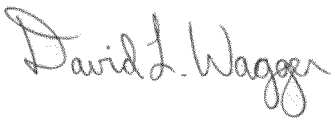
regulatory processes for refrigerant management and refrigerant approval are not well coordinated, especially concerning flammable refrigerants.

As the main cross-cutting office within EPA, the Office of Policy needs to exert greater influence across and within the program offices, including the Office of Air and Radiation and the Office of Land and Emergency Management, to communicate and coordinate their regulatory activities better to reduce regulatory conflicts and difficulties before they are codified.

CONCLUSION

ISRI appreciates this opportunity to identify for EPA those regulations that impede the business of recycling in the United States and are in need of repeal, replacement or modification. We would welcome the opportunity to meet with you and any other EPA staff to discuss our recommendations. Please feel free to contact me at 202-662-8533 or DavidWagger@isri.org.

Sincerely,



David L. Wagger, Ph.D.
Chief Scientist
Director of Environmental Management
Institute of Scrap Recycling Industries, Inc.
1250 H Street, NW, Suite 400
Washington, DC 20005
(O) 202-662-8533
DavidWagger@isri.org

From: Bolen, Brittany
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with the Brick Industry Association
Start Date/Time: Thur 6/15/2017 5:30:00 PM
End Date/Time: Thur 6/15/2017 6:00:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request: I am writing on behalf of the Brick Industry Association (BIA) to request a meeting with Administrator Pruitt. BIA is a national trade association representing clay brick manufacturers, distributorships, and their suppliers. Two-thirds of all the brick shipped in North American is manufactured by BIA members. In addition, many BIA member companies are family-owned small businesses. Many of BIA's members are subject to a recently-promulgated National Emissions Standard for Hazardous Air Pollutants for Brick Manufacturing (i.e., the "Brick MACT"). BIA has a pending challenge to this rule in the DC Circuit. BIA does not want to discuss the litigation with the Administrator. BIA does hope to discuss with the Administrator the enormous impact that the rule is having on the industry and some of BIA's ideas as to how the rule could be improved and the burden lessened. A group of BIA members will be in Washington, DC, on Thursday, June 15. A meeting that date would be ideal. If that does not work for Administrator Pruitt, we would appreciate any suggested alternative dates.

Contact:

Bill Wehrum

Partner

wwehrum@hunton.com<mailto:wwehrum@hunton.com>

p 202.955.1637

Hunton & Williams LLP

2200 Pennsylvania Avenue, NW

Washington, DC 20037

hunton.com<http://www.hunton.com>

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Jerry Jung
Start Date/Time: Wed 7/26/2017 5:00:00 PM
End Date/Time: Wed 7/26/2017 5:30:00 PM
Jung Rethink Ethanol Opinion Washington Times EnergySection_Final (1).pdf
Bio (16).docx

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

From: Jerry Jung [mailto:jerrold.m.jung@gmail.com]
Sent: Friday, April 28, 2017 3:08 PM
To: Dravis, Samantha <dravis.samantha@epa.gov>
Cc: Bill Schuette <billschuette53@gmail.com>

I reached out to Mr. Schuette to give me your contact information because I wanted to keep Mr. Pruitt's office in the loop regarding op eds in the Washington Times. The Times will be running a section on energy. When they have asked me to submit an op-ed on the topic of ethanol, they mentioned that they would also be publishing an op-ed from Mr. Pruitt.

Attached is what I have submitted. I suspect that my views are in line with those of Mr. Pruitt, but I wanted to provide him an opportunity to comment on what I wrote. Any comments or suggestions that his office has would be welcome.

Jerry Jung

586-850-8096

Jerrold M. Jung

586-850-8096 jerrold.m.jung@gmail.com P.O. Box 7060 Novi, MI 48376

Employment background:

Over $1,000,000,000 of shareholder value created by companies that I founded or controlled.

Surety Bond analyst for Travelers Indemnity Company from 1977 to 1978.

Director of Reservations for Continental Airlines from 1979 to 1982.

Designed from 1983 to 1985 passenger revenue optimization software still used by over 50 air carriers.

General Manager of Michigan CAT's Engine Division from 1983 to 1987.

Founded Landfill Energy Systems in 1987. The EPA awarded this alternate energy company a certificate that declared that methane reduction achieved by its power plants was equivalent to taking 800,000 cars off of the road. Company was sold in 2008.

CEO of Michigan CAT from 1988 to 2011. Market share rose to 60% from 25%. Revenues peaked at $550,000,000 and employment at 880. The business was sold in 2011 because my children have other career interests.

Chairman and founder of Oak Adaptive, Inc. that provides software tailored to Caterpillar dealers as well as an innovative sentencing app that provides information for use within the criminal justice system.

Currently semi-retired and manage Rule of Ones, LLC an investment vehicle.

Educational background:

Graduated from Birmingham Seaholm High School in 1971. Received Bausch-Lomb Award for outstanding high school students. On committee that established Bingham Farms Nature Center. Varsity letter in Track.

Attended University of Michigan from 1971 to 1973. Phi Eta Sigma honor fraternity.

Graduated from Tulane University in 1975, 1st in class, summa cum laude with honors in economics. Phi Beta Kappa honor fraternity. Commodore of sailing club.

Attended Harvard Graduate School of Business in 1976.

Co-authored "Price Elasticity of Demand for Air Travel." Published in the 1976 fall edition of *Transport Economics and Policy*. This paper informed Congressional debate when airline fares were deregulated. It is still utilized as instructional material at the University of Chicago School of Public Policy.

Affiliations:

Chair of Michigan Colleges Alliance, a group of 15 private independent colleges.

Board member of the Michigan League of Conservation Voters.

Board member of Public School Academies of Detroit.

Board member of 6,000,000 member National Wildlife Federation.

Chair of the Michigan State Transportation Commission from 2010 until 2015.

Past Director of Warren Equipment Company, a Texas based gas compression fabricator and Caterpillar dealer with revenues in excess of $1,000,000,000.

Past Vice-Chair of St. Mary Hospital in Livonia Michigan.

Past Trustee of the Nature Conservancy in Michigan.

Past President of the Michigan Construction Equipment Dealers Association.

Past Board Member of the Cooperative Tractor Dealers Association—a financing co-op.

Past Board Member of NWEA—the National Wood Energy Association.

Philanthropic Endeavors:

Supports a wide variety of environmental and educational initiatives that improve the legacy we leave to future generations.

Founded in conjunction with the Michigan Colleges Alliance the "Third 90" program that annually introduces hundreds of inner city high school students to nature as well as to private college professors, students and campuses.

Founded "RethinkEthanol.com" an entity that educates legislators and the public about the need for corn ethanol reform.

Honors:

Scenic Michigan—"Hero Award" 2009

Michigan Infrastructure and Transportation Association—Honorary Member Award: 2012

Michigan Aggregate Association— Distinguished Service Award: 2012

Detroit Public TV—Riley Stewardship Award: 2012

Michigan League of Conservation Voters—Lifetime Conservation Award: 2013

Tribute from Michigan Transportation Commission—Resolution 2015-2.

The State of Michigan named a roadside park in my honor.

Honorary Ph.D. from Adrian College in May of 2017.

References: (contact information provided upon request)

Governor Rick Snyder.

National Wildlife CEO Collin O'Mara.

Former CEO of Warren Equipment Company and Dallas Federal Reserve board member Richard Folger.

Director Michigan Department of Transportation Kirk Steudle.

CEO and Chairman of Caterpillar Tractor Company Doug Oberhelmen.

Congressman David Trott.

Michigan Republican Chair Ronna Romney McDaniel.

Former Secretary of Agriculture and Caterpillar Tractor Board Member Clayton Yeutter.

DTE Energy Chairman Gerry Anderson.

Recently retired CEO of International Transmission Company Joe Welch.

Past owner of Thompson McCully Paving Company and charter school visionary Bob Thompson.

Former Ambassador to Belgium Allan Blankenship.

Personal:

Reside in Birmingham Michigan.

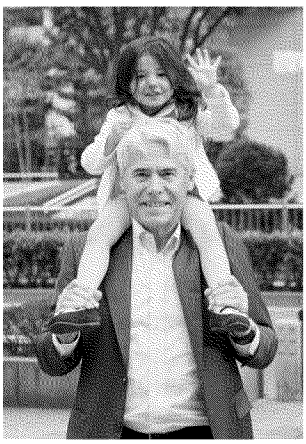
Married to Eve Baughman Jung.

Have three children, three grandchildren and two stepchildren.

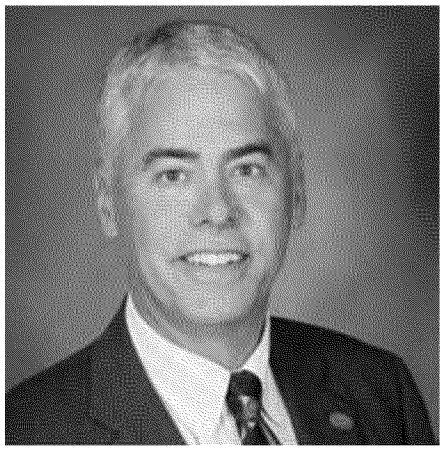
Enjoy outdoor activities such as gardening, hiking, hunting, fishing, golfing, sailing and skiing.

Practice "eco-restoration" on several properties in Michigan.

Own and manage for bio-diversity and carbon sequestration over 43,000 acres of forestland in central Tennessee.



It's time to rethink ethanol mandates



By Jerry Jung

This year the Environmental Protection Agency (EPA) has mandated that 15 billion gallons of ethanol be added to gasoline. As a result, most gasoline contains about 10 percent ethanol.

Initially, automotive manufacturers saw the mandate as a cheap way to increase octane ratings, and corn growers thought it would be a boon to the agricultural economy. Casual observers and even some conservation organizations thought that it was a renewable source of energy that would help the environment and reduce harmful emissions. Others saw it as a way to reduce dependence on foreign oil.

After eight years of dramatically increasing mandates, the results are in and it is apparent that none of these goals have been met — in fact, the opposite is true.

Due to an arcane and fraud-prone ethanol credit trading scheme, the price of higher-octane gasoline has skyrocketed, relative to lower grades; the farm economy continues its decline; finite resources such as phosphorus and subterranean aquifers are being depleted; wildlife and biodiversity are being threatened; harmful emissions have doubled; and the mandate has had no impact on reducing use of fossil fuels.

How can this be?

The answer is simple — it takes as much fossil fuel to produce ethanol from corn as it yields.

A Cornell University study estimates that it takes 40 percent more energy to produce corn ethanol than it yields. The actual distillation of corn into ethanol consumes about 28 percent as much energy as it produces; yet when all the inputs required to grow corn — such as the production of herbicides, insecticides, fertilizer and the fuel for tractors and transportation — are factored in, the equation changes. Even the U.S. Department of Agriculture, a misguided proponent of ethanol production, estimates that the energy output only slightly exceeds the inputs. The agency points out that by-products from the distillation process can be fed to livestock, but studies such as one published by the University of Nebraska point out that the practice of feeding distillates to cattle shortens the shelf life of their meat. Other studies indicate that the practice alters the flavor of meat and can make livestock sick.

The price of corn shot up to $8 per bushel when the mandate was dramatically ramped up nine years ago. As a result, there were food riots in some countries where corn is a dietary staple.

Since then, the amount of acreage devoted to growing corn has increased to over 35 million acres in the U.S. (larger than most states) and the price is back where it started.

Unfortunately, much of this land is ecologically sensitive. The National Wildlife Federation estimates that 10 million acres in the U.S. have been converted from Conservation Reserve Programs — virgin prairie, woodlands and wetlands in the U.S. — to grow corn over the last 10 years.

The careful reader might question how 35 million acres are growing corn for ethanol, but "only" 10 million new acres have been converted to agricultural use in the U.S. Much of this acreage used to grow soybeans for export. Typically, farmers would rotate between corn and soybeans, but now many grow corn year after year.

South America has filled the void, with the result that Brazil now exports more soybeans than the U.S. — with the concomitant destruction of forest and grasslands in that country, not to mention an increased trade deficit here in this country.

A recent study discussed by a Conservative Political Action Committee panel in February concludes that the farm economy continues its decline despite — and perhaps because of — ethanol mandates.

Ethanol is a low-value commodity. A bushel of corn will produce 2.8 gallons of ethanol worth about $4.50. The same corn, fed to poultry, produces about $20 of value, and to cattle, about $50 of value. It is this value-added chain that creates rural employment and economic diversity.

It is not uncommon to see hand-painted signs in Iowa that read "Family Farms, not Factory Farms." A poll conducted by a leading conservation organization shows surprising opposition to ethanol mandates in rural areas. It is no wonder, since these are the populations most affected in terms of water quality and outdoor recreational opportunities. These are the families that must confront chemical pollution and that are at a competitive disadvantage against huge absentee landowners, when it comes to low-value commodity products. Look no further than the City of Des Moines water authority's lawsuit against upstream agricultural districts. Look no further than the City of Toledo that shut down water supplies to hundreds of thousands of residents because of nutrient-fed toxic algae. Look no further than the just-released U.S. Geological Survey study that confirmed deadly "neo-nic" insecticides in Iowa drinking water. Perhaps it is no accident that Texas Sen. Ted Cruz, who has never supported ethanol mandates or costly agricultural subsidies, won the Republican primary in Iowa.

There are many other reasons to discontinue ethanol mandates. Dozens of diverse stakeholder groups, representing fiscal conservatives; small and marine engine users and manufacturers; food producers and food justice groups; charter boat captains; The Sierra Club, The National Wildlife Federation and the Audubon Society; and even the American Petroleum Institute are opposed to subsidized and mandated corn ethanol production.

Ironic, is it not, that a mandate sold to Congress and the public as "green" is arguably the biggest polluter of air and water in the U.S.? The policy has also been a significant driver of what has aptly been termed the Sixth Extinction of biodiversity.

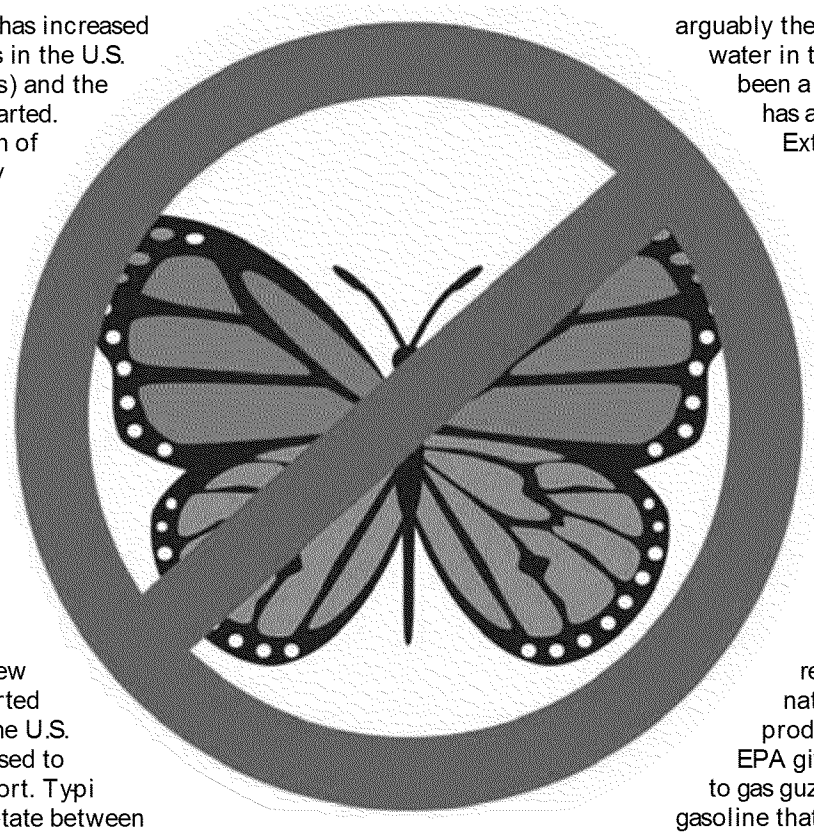
Fortunately, legislation has been introduced in the House of Representatives that would cap the ethanol content of gasoline at 10 percent and reduce mandates over time. Urge your members of Congress to support this legislation.

The EPA can also play a vital role as they work with automobile companies implementing improved fuel economy standards.

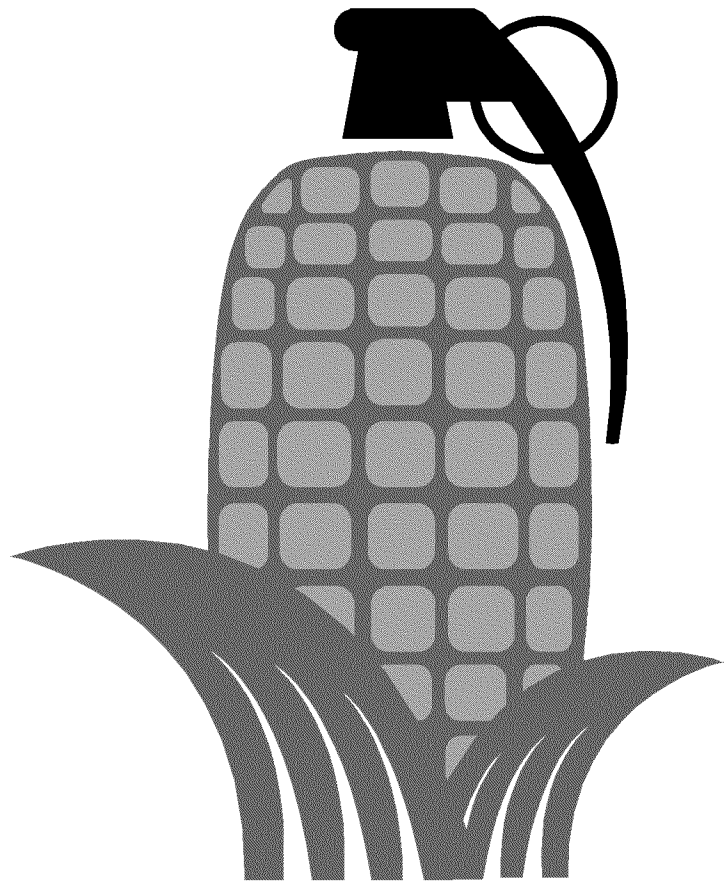
The first step in this regard would be to eliminate artificial incentives to produce ethanol. Currently, the EPA gives CAFE mileage bonuses to gas guzzlers if they can consume gasoline that is up to 85 percent ethanol. Credits are also given to compensate for the reduced energy content of ethanol as compared to pure gasoline. Given the environmental destruction and excessive use of fossil fuels consumed in the production of ethanol, these credits should realistically be debits. It is imperative that the EPA consider the overall economic and environmental impact of their policies and not focus solely on a single aspect of the overall picture.

Jerry Jung is a retired businessman and conservationist who became concerned when Monarch Butterflies stopped arriving at his hobby farm in central Michigan after migrating from Mexico. The pollinator's population has declined by 95 percent since the ramp-up in ethanol mandates.

Ethanol is a low-value commodity. A bushel of corn will produce 2.8 gallons of ethanol worth about $4.50. The same corn, fed to poultry, produces about $20 of value, and to cattle, about $50 of value. It is this value-added chain that creates rural employment and economic diversity.



17cv01906 Sierra Club v. EPA ED_001523_00005702-00001



RethinkEthanol.com

A SPECIAL REPORT PREPARED BY THE WASHINGTON TIMES ADVOCACY DEPARTMENT

From: Kime, Robin
Location: 3528 WJCN
Importance: Normal
Subject: Regulatory Reform Meeting with the American Iron and Steel Institute
Start Date/Time: Thur 6/29/2017 1:15:00 PM
End Date/Time: Thur 6/29/2017 1:45:00 PM
AISI -- EPA Evaluation of Existing Regulations Public Comment - Final.pdf

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Mike Long, Cliffs Natural Resources

Patrick Bloom, Cliffs Natural Resources

Tom Miller, Nucor

Todd Young, U. S. Steel

John Stinson, Evraz North America

Tom Wesolowski, Evraz North America

Tom Dower, ArcelorMittal

Julianne Kurdilla, ArcelorMittal

Katie Larson, SSAB Americas

Brett Smith, American Iron and Steel Institute

Colin Carroll, American Iron and Steel Institute

Paul Balserak, American Iron and Steel Institute

Request: I would like to see if several AISI members and I could come in and give you an overview of the environmental issues that are key to the steel industry. Following on Administrator Pruitt's well-received address at our annual meeting last week, I think the timing is ripe for such a discussion. We would greatly appreciate the opportunity to brief you on our issues as you work to prioritize the comments received from your May 15 public information request on regulatory reform. We would also like to learn more about the potential revival of the something like the old Sectors Strategies program.

Contacts:

Paul Balserak <pbalserak@steel.org>

Thomas J. Gibson

President and Chief Executive Officer

American Iron and Steel Institute

25 Massachusetts Avenue, NW

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Washington, DC 20001

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Fax: 202.452.1039

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www.steel.org

Thomas J. Gibson
President and CEO

May 15, 2017

Ms. Samantha K. Dravis
Office of Policy
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Response to Environmental Protection Agency s Request for Comment on the Evaluation of Existing Regulations (Docket ID No. EPA-HQ-OA-2017-0190)

Dear Ms. Dravis:

The American Iron and Steel Institute (AISI), on behalf of its U.S. producer member companies, appreciates this opportunity to comment on the Environmental Protection Agency s (EPA) Request for Comment on the Evaluation of Existing Regulations (82 Fed. Reg. 17793)(April 13, 2017). AISI serves as the voice of the North American steel industry in the public policy arena and advances the case for steel in the marketplace as the preferred material of choice. AISI also plays a lead role in the development and application of new steels and steelmaking technology. AISI is comprised of 18 member companies, including integrated and electric furnace steelmakers, and approximately 120 associate members who are suppliers to or customers of the steel industry. AISI s member companies are classified in the North American Industry Classification System (NAICS) in codes 3311 (Iron and steel mills and ferroalloy manufacturing) and 3312 (Steel product manufacturing from purchased steel). Additionally, member companies that mine iron ore are included in code 2122 (metal ore mining).

We reviewed the request for comment and have gathered information from our member companies detailing the impact of existing federal regulatory requirements on their ability to operate, construct, expand or modify facilities in the U.S. The detailed comments below provide:

1. Background on the number and types of permits our members need to obtain to construct, operate and/or expand facilities in the U.S.;

2. Proposed changes to existing permitting regulations that would help streamline the process and reduce overall costs for companies; and

3. A broader list of regulations outside of the federal permitting structure that our members consider an added and unnecessary burden to domestic manufacturing.

1. Manufacturing Permitting Process

The construction, operation and expansion of a steel, coke and/or mining operation requires various permits under different existing federal statutes regulating air emissions, discharges to water and handling and processing of waste products. The total permits needed to construct and operate a facility will vary depending on the particular operation but could be as high as 12 or more permits for a single facility across various state and federal agencies. As will be outlined further in our comments, the high costs and timing uncertainties in the numerous permit application processes create significant impediments and often frustrate future planning of new or expanded facilities in the U.S.

Under the Clean Air Act (CAA) before a facility is constructed or expanded the company is required to go through the New Source Review (NSR)[1] permitting process that ensures that facility will employ up-to-date pollution control technology.

Facilities opening or expanding in an area of the country considered in attainment with current National Ambient Air Quality Standards (NAAQS) must obtain a pre- construction permit under the CAA s prevention of significant deterioration (PSD) provisions. The PSD permitting process requires a showing that the facility is using the best achievable control technology (BACT) to ensure projected emissions increases will not cause an area to exceed NAAQS for any of the listed criteria pollutants. The PSD process is generally applied for and issued through state environmental agencies with oversight and approval from U.S. EPA Regional offices. A PSD permit may be required for various processes or emission units at a single facility. AISI members report that the PSD permitting approval process can take from a little over a year to up to two years in some EPA Regions despite the CAA

[1] NSR permitting technically refers to permitting of facilities in CAA nonattainment areas, and PSD refers to permitting of facilities in CAA attainment areas. Generally, the term NSR is often used broadly to refer to the permitting program, including both NSR and PSD permitting. These terms are used throughout this document according to that standard approach.

requirement that completed permit applications be granted or denied not later than one year after the date of filing.[2]

In addition to PSD permitting, facilities must also obtain a CAA Title V Operating Permit through its relevant state agency. The Title V permit includes the pollution control requirements from federal or state regulations that apply to a source and is subject to reviews by U.S. EPA, state environmental agency, federal land managers and public comment and hearings. Similar to the PSD permitting process, AISI members report varied timelines for completing the Title V review and approval process depending on the state regulatory agency and EPA Regional office, taking up to three years to receive the final permit and costs of several millions of dollars for each operating permit needed. Title V permits also must be renewed every five years, during which time a facility needs to demonstrate compliance with the permit conditions by reporting its air emissions over the five year period.

The Clean Water Act (CWA) administered by both U.S. EPA and U.S. Army Corps of Engineers (Army Corps) contains various permitting requirements that most industrial facilities must meet. CWA Sections 401 and 404 deal with certification and permitting for constructing, operating or expanding an industrial facility where federal waters will be dredged or filled. Most Section 401 water quality certifications are handled by the states and can be used to condition or deny Section 404 permits issued by the Army Corps. The Section 401 certification and Section 404 permit process can take between a year to up to four years to complete. Discharges of either industrial process waters or storm waters into federal jurisdictional water requires National Pollutant Discharge Elimination System (NPDES) permits. These permits are issued by state environmental agencies with oversight from EPA Regional offices. Members report that NPDES permits can take six months or more to obtain depending on the state or region.

2. Proposed Changes to Streamline Existing Permitting Regulations

Once a facility is constructed and in operation, some of the most onerous permitting processes that facilities have to go through to continue to function as well as to seek any efficiency improvements or expansions are those relating to obtaining the NSR/PSD construction permits described above.[3] The loss of productivity and

[2] 42 U.S.C. § 7475(c).
[3] *See also* 40 C.F.R. Parts 51 and 52.

costly, time consuming permitting efforts associated with the current NSR process are without any real benefit to the environment and have the unintended consequence of actually discouraging installment of new efficiencies.

EPA should seek to streamline NSR permitting for modifications conducted at existing steel facilities to facilitate and stimulate productivity increases, innovation and efficiency in domestic steel manufacturing. This effort is necessary because the current NSR procedures have the unintended consequences of often forcing decreases in production. EPA proposed many of the reforms advocated in 2002, 2003, 2004 and 2005. Although some of these reforms were stayed as a result of court rulings, AISI believes that EPA can still implement the reforms through a careful review of the provisions and could yield beneficial NSR reforms.[4] AISI stands ready to help EPA engage in this process.

a. Routine Maintenance Repair and Replacement Reforms

The NSR rules provide that certain physical and operational changes at a plant do not constitute "major modifications" and thus do not need to undergo the burdensome NSR process.[5] One of the categories of exempt activities are those considered "Routine maintenance, repair and replacement" ("RMRR").[6] EPA applies the RMRR exclusion primarily on a case-by-case basis, using a multi-factor test for determining whether a particular change falls within or outside the exclusion. This case-by-case analysis involves several different time consuming, expensive and legally risky options a company must weigh to potentially qualify for the RMRR exemption: (i) in advance of a facility submitting a construction permit the company can request a formal applicability determination (which generally takes a minimum of three months); (ii) an RMRR argument for exemption can be made as part of the construction permitting process, which also can take many months; (iii) a facility can proceed "at risk" without prior regulatory approval and with potentially serious enforcement consequences; or (iv) a facility can forego installing state-of-the-art equipment or undertaking efficiency projects and continue operations with older, less efficient equipment.

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[4] *See New York v. EPA*, 443 F.3d 880 (D.C. Circuit 2006).
[5] 40 C.F.R. § 51.165(a).
[6] *Id.*

EPA previously recognized the need to reform the RMRR determination process due to inherent uncertainty, costs and legal risks imposed on domestic facilities, stating that the process:

> results in lost capacity and lost opportunities to improve energy efficiency and reduce air pollution.

And also requires permitting authorities:

> to devote scarce resources to make complex determinations, including applicability determinations, and consult with other agencies to ensure that any determinations are consistent with determinations made for similar circumstances in other jurisdictions.

EPA goes on to say of the currently-existing NSR process:

> the effect is to discourage plant owners or operators from engaging in replacements that are important to restoring, maintaining and improving plant safety, reliability and efficiency...this effect is exacerbated by the uncertainties inherent in the case-by case approach.[7]

These same deficient permitting processes exist today and present the same challenges to domestic manufacturing that existed more than a decade ago. EPA should revisit certain portions of the RMRR reforms from 2003, specifically the provisions known as the Equipment Replacement Provisions (ERP). These provisions would exclude from the definition of major modification at 40 C.F.R. Section 51.165, projects that replace existing, permitted equipment or components thereof with like-kind or functionally equivalent equipment, provided the replacement components or equipment do not alter the basic design of the process unit and would not result in an exceedance of the permit limits.

Additionally, EPA could identify specific activities at steel facilities and other industrial sector operations that should be presumptively considered to constitute RMRR. Such a list could be added to the regulatory language or could be issued as clarifying guidance. As an initial example, the following list of modifications common to the steel industry could be considered presumptively as RMRR rather than be

[7] 69 Fed Reg. 61250 (October 27, 2003).

subjected to the current costly case-by-case analysis: replacement of furnace shells, oxy-fuel burners, oxygen lances, tundish pre-heaters, tundish burners, transformers, capacitors, regulators, lime or carbon injection equipment and other equipment that is commonly and routinely replaced in the industry as part of normal, continual maintenance activities. AISI and its members welcome any opportunity to discuss these recommended changes to the RMRR process with the administration or answer any questions.

b. Exclude Pollution Control Projects from Modification Definition

Another potential regulatory change to the existing definition of "major modifications" triggering NSR permit requirements that could streamline the permitting process for existing manufacturing facilities is to exclude Pollution Control Projects ("PCPs") that result in net overall reductions of air pollutants, involve upgraded or rebuilt pollution control equipment or devices, or allow raw material/fuel substitutions that do not result in exceedances of permit limits. Similar to the RMRR revisions described above, EPA explored excluding PCPs from NSR review in the past on the basis that the exclusion "allows sources to install emissions controls that are known to be environmentally beneficial" thus offer flexibility while improving air quality.[8] The prior EPA effort listed specific technologies that the agency believed should be presumptively considered PCPs, but further provided that PCPs not listed could nevertheless qualify for the exclusion if the permitting authority determined on a case-by-case basis if the non-listed PCP was environmentally beneficial, and provided that PCPs entitled to the exemption could include in addition to equipment and technology, work practices, process changes or other pollution prevention strategies. AISI again recommends EPA revisit the PCP exclusion and publish in either regulatory text or through guidance a list of technologies, work practices and/or strategies employed in the steel sector that would be presumptively considered PCPs and exempt from NSR review.

c. Match the NSR Definition of Major Modification with the NSPS

EPA should revise the NSR emissions test definition to match the NSPS definition. This change would provide greater opportunities for facilities to make efficiency improvements to their operations without the significant costs and permit approval delays that are currently associated with the NSR trigger. EPA proposed a

[8] 67 Fed. Reg. 80190 (December 31, 2002).

similar change in definitions which, had it been finalized, would have applied only to electric generating units (EGUs).[9]

AISI believes that that statutory language behind the NSR program fully allows for this change, and the benefits of such a change would significantly aid streamlining the permitting process currently faced by our members facilities.

d. Adopt Plant-Wide Applicability Determinations

EPA should promote and facilitate a voluntary option that a facility can establish Plant-Wide Applicability Limitations (PALs)(basically emissions limits that apply facility-wide) through a permitting process, allowing such facility to change, modify and upgrade equipment and operations and add new equipment without triggering major modification NSR review, provided the changes do not result in exceeding the established PAL emissions limits.[10] When EPA explored establishing PALs in the past, the agency stated [w]e believe that the added flexibility provided under a PAL will facilitate your ability to respond rapidly to changing market conditions while enhancing the environmental protection afforded under the program. [11] AISI believes EPA s conclusion remains true today, however, these provisions were stayed in litigation. EPA could revisit this issue and work with industry to minimize the burdens of establishing PALs, so that steel plants and other domestic manufacturing facilities would be able to make needed changes to equipment and processes more quickly than under the existing burdensome NSR process. This would allow steelmaking facilities and other manufacturers to have flexibility to respond to market conditions and make the U.S. manufacturing industry more competitive in the global marketplace. With a PAL, steel facilities would, without increasing emissions above the levels already deemed acceptable by the permitting authority in the PAL permit, be able to invest in equipment and technologies without the risks and delays inherent in the existing NSR permit process.

e. Specific NSR Permit Issues

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[9] *See* 70 Fed. Reg. 61081 (October 20, 2005).
[10] *See* 40 C.F.R. § 51.165(a)(1)(v).
[11] 67 Fed. Reg. 80189 (December 31, 2002)

There are a number of additional important NSR permit related matters that would benefit greatly from increased clarity and flexibility:

- EPA should reconsider policy reasons for co-located sources being considered the responsibility of the host company or facility. A co-located facility is on leased ground and has its own operating permit, employees, equipment and is responsible for maintaining compliance. EPA maintains the position that the host company has control and responsibility for any co-located company s actions, which is not the case. Separately permitted entities should not be a part of permitting evaluations for each other.

- EPA should provide for better flexibility for emissions offsets from energy conservation and reuse projects. For instance, over-restrictive netting requirements force many limits on a new boiler because the rules do not allow for direct emission offsets without additional federally enforceable limits to be set, like a minimum blast furnace gas (BFG) limit or a boiler specific emission limit. While a natural gas limit would make sense for a new, efficient boiler, the other requirements do not when looking at the overall reduction in emissions.

- EPA policies that reversed in-project netting should be established to give needed flexibility for modifications so that a permittee does not have to pull in every source (including on-site contractors) for netting calculations.

- EPA should modify rules related to data collection to allow for more current techniques. Certain rules list prescribed means of data collection that are now archaic and not easily maintained as they are obsolete (*e.g.*, paper chart strip recorders). Likewise, rules related to equipment calibration should be modified. These rules are outdated in that they do not recognize the newer generations of electronic instruments that cannot be calibrated in a traditional sense and either work, fail or internally diagnose and alert user of required attention. Many units also self-calibrate. Facilities now create a calibration to satisfy the rule requirement but the work is just a paper trail with no real meaning or added value for instrument performance.

- EPA should address PSD projects by allowing the permittee to revisit and/or take on new or additional limits when transitioning from the source modification/construction permit to the operating permit before closing the PSD time-period if the project lasts more than some minimum time threshold (*e.g.*, 18 months or two years from the initial application to the facility start-up). Facilities should have the right to true-up or make

adjustments with the netting balances prior to operating the new equipment in case of previously unforeseen changes in scope, so long as the permittee does not change the significance determination of the project in the Technical Support Document (TSD).

f. Align Implementation Guidance with NAAQS Revisions

Under current EPA policy, when NAAQS are revised for any of the criteria pollutants, existing NSR permit applicants must often redo the required modeling analysis using the new standard. This is often difficult and costly for both the affected facility and the state permitting authority as EPA has increasingly revised NAAQS before providing the states with implementation or modeling guidance. This lag time between revised standards and the implementing guidance, which often spans many years, can cause states to delay PSD permit approvals for facilities until EPA provides the needed data. The simple fix is for EPA to ensure it has the necessary implementation and modeling guidance in place before it issues a revised standard or at the very least have guidance on track to be available before a revised standard comes into effect.

g. Grandfather Existing NSR Permits When Adopting New NAAQS

EPA should adopt regulations requiring that NSR permit applications be subject to the NAAQS standards that exist on the date the application is submitted to EPA. Manufacturing facilities that have triggered NSR review spend significant resources modeling emissions to demonstrate that the NAAQS will not be exceeded when BACT controls are employed. If any of the NAAQS are changed while the permit is being processed EPA often requires new modeling based on the new standard. A consistent approach that grandfathers existing applications in connection with any future NAAQS revisions would provide companies with certainty and ensure companies do not spend time and resources on NSR permitting only to have the goal posts moved at the last minute and find themselves back at square one. This approach could also help alleviate EPA resources from having to develop the detailed guidance states need to implement a revised standard in a rushed timeframe.

h. Single-Source Photochemical Grid Modeling

The recent final rule amending Appendix W requires that, in the absence of an analysis allowing a source to screen out of a requirement to conduct and report the

results of air quality modeling, applicants seeking PSD permits must model impacts of precursors to ozone and $PM_{2.5}$ using a chemical transport model such as a photochemical grid model.[12] EPA does not, however, specify a preferred model for this purpose. Although the CAA requires applicants for PSD permits to model air quality, EPA has long recognized that it was not technically sound to designate with particularity specific models to be used to assess the impacts of a single source of ozone or $PM_{2.5}$ and instead allowed a permit applicant, working with the permitting authority, to choose a method to conduct the required air quality analysis. EPA has evaluated whether it is feasible to designate a single model for ozone and $PM_{2.5}$ for use by all major sources applying for a PSD permit and concluded that it could not make such designations. EPA should, therefore, have retained the existing requirements applicable to sources emitting precursors of ozone and $PM_{2.5}$. What EPA has done, however, is to effectively eliminate the exploring of other methods for analyzing the impact of a proposed source on air quality. EPA should return to its long-standing prior approach to air quality analysis to support PSD applications for sources that emit precursors to these pollutants. At a minimum, EPA should adopt a moratorium on single-source modeling of at least three years to further develop cost-effective models and screening techniques. EPA can reevaluate the state of technology at the close of that period to determine whether the moratorium should continue.

i. Use of Probabilistic Modeling

Tighter margins between background pollutant concentrations and increasingly-stringent NAAQS make it more and more difficult to demonstrate compliance using overly-conservative modeling assumptions. Current EPA guidance requires deterministic air quality models that use a facility s maximum operating rate and maximum allowable emissions as opposed to realistic actual operating and emissions rates at a facility that are often well below the maximum allowables. This frequently results in modeling data substantially overstating the effects a new or modified facility will have on ambient air quality for the region. EPA should adopt more probabilistic approaches to modeling to address this conservatism, especially given ever stricter NAAQS approaching background levels that makes it difficult to attain permits for expansions, construction or efficiency improvements. Probabilistic modeling, for example, would be allowed to take into account the variability of both

[12] 82 Fed. Reg. 5182 (January 17, 2017) (to be codified at 40 C.F.R. Part 51, Appendix W 5.3.2(c)).

background air quality and emission rates for modeled sources. While numerous commenters suggested this approach to EPA during consideration of the final Appendix W rule, EPA declined to take such action. EPA is using such probabilistic modeling in other programs, so should be able to make it workable and reliable under NSR.

j. Air Emission Modeling Improvements Needed

EPA has recognized that problems exist with its preferred models, but designated fixes to those problems are considered non-default BETA option. Use of BETA fixes requires Model Clearinghouse approval, which substantially limits the utility of a fix. While fixes may require some period of technical assessment, prolonging non-default BETA designation of proven fixes does not foster the balance between the economy and environment called for by the CAA s PSD provisions.

EPA should make improved modeling tools a higher priority, including through allocating more funding for model development. Furthermore, EPA should conduct rulemakings to update Appendix W more frequently. Before the recent revision released in late 2016, EPA had not revised Appendix W since 2005, even though EPA has revised NAAQS for nearly every criteria pollutant in that same period. At a minimum, EPA should review Appendix W when it reviews NAAQS. Conducting such revisions concurrently with identification of improvements to models would better achieve the PSD program s explicit statutory purpose of ensuring economic development while protecting air resources. Key modeling improvements include:

- **Receptor exclusions** strengthen EPA guidance to exclude receptor data from areas that the public does not have legal or physical access to;
- **PM fugitive emissions** use of a pre-processing step to account for the overestimate of fugitive emissions; and
- **Source Characterization** EPA should streamline the modeling protocol approval process. Case-specific refinements involving source characterization should not trigger a non-guideline modeling approach. Substantial objective evidence and alternative source characterization protocols have been submitted to EPA to support the use of intermediate steps (without changes to AERMOD) to improve the accuracy of air dispersion modeling demonstrations for unique, non-traditional air

emission sources (*e.g.*, fugitive emissions, sources with large fugitive heat releases, unique stack configurations, etc.). EPA should authorize the use of source characterization techniques such as LIFTOFF, AERMOIST, AERLIFT, urban characterization, pre-processing step for fugitive PM, etc. Furthermore these source characterization techniques should be considered for routine application without a need for a non-guideline model approval if adequate documentation of the effects is provided.

- **EPA's AERMOD model is known to over-predict** and controls should not be required based on modeling and sources should not be responsible for the cost of adding new ambient air monitors. AISI submitted a study to EPA in 2011 that documents AERMOD's over prediction of emissions by more than 10 times compared to monitored data. When modeling shows nonattainment, sources can add new monitors per the SO_2 Data Requirements Rule instead of relying on modeling. EPA or states, not industrial sources, have historically been responsible for the cost of new and existing monitors and this cost should not be shifted to facilities. Modeling results that show an overprediction compared to monitored data should be allowed to be adjusted or calibrated based on the monitored data, instead of having industry install expensive controls based on known inaccurate modeled results.

k. Base NSR BACT Reviews on Domestically Proven Technology

In addition to the specific NSR regulatory reforms identified above that provide clarification on when PSD permitting is required, AISI suggests other changes to EPA policy once the PSD review process is triggered. BACT controls and limits considered during the PSD analysis should be based only on existing proven technologies and limits clearly demonstrated as reducing emissions at facilities located in the U.S. The PSD BACT evaluation process, spelled out through EPA guidance, should not include unproven technologies employed in other countries that have not been demonstrated as commercially feasible or effective at controlling emission in the U.S. Requiring domestic facilities to conduct technology reviews and costly feasibility analyses of technologies utilized in countries that do not have the same rigorous air pollution control and permitting requirements, places unreasonable permitting demands and delays on the already lengthy U.S. permitting process.

For the same reasons as above, the control technologies or limits considered under PSD BACT should be required to have been previously performance tested at a domestic facility to show an environmental benefit from the existing control

technology. Facilities seeking construction permits should not be required to evaluate technologies that are not already proven in the U.S. to reduce emissions. Because the current PSD BACT processes are unduly burdensome and time consuming for permit applicants and the reviewing authority, these procedures should be changed to reduce the economic burdens and time delays associated with BACT technology review.

l. Discontinue Use of Permit Performance Tests in Enforcement Actions

EPA has a history of using its enforcement powers to mandate control technologies and emissions limits in consent decrees as injunctive relief or mitigation measures. This practice of case-by-case enforcement measures creates significant disparities in the treatment of manufacturing facilities across the nation. Most importantly the enforcement strategy forces a small subset of facilities to bear the burdens of evaluating control technologies that EPA should be promoting through notice-and-comment rulemaking, or the permitting process. The enforcement burden on the targeted facilities can be extremely expensive and disruptive and often forces production limits resulting in a significant economic disadvantage of a target mill or group of mills, compared to their competitors. It also creates an additional corresponding burden and stigma of legal defense and enforcement in the facilities public record that the surrounding community may not fully understand.

EPA should also not utilize results from a post-construction performance test in an enforcement case seeking penalties or injunctive relief, provided the EPA-approved and permitted BACT technology installed was submitted with good faith pre-operational estimates of emissions. It is unfair and unproductive for EPA to review and approve technology-forcing BACT controls in a construction permit, only to file an enforcement action against a facility when it has invested in and installed the BACT controls in the event the controls do not meet the emissions reductions the facility and EPA anticipated.

AISI suggests that rather than pursue an enforcement action for penalties in the event EPA-approved BACT controls do not meet expected reductions, EPA should pursue a policy of modifying the construction permit based on the results of the performance testing. For emissions limits to be established as part of a BACT process, EPA should adopt a test-and-set process that establishes limits post-construction, rather than establishing emissions limits in advance of a performance test.

m. Discontinue Use of Enforcement Actions to Amend NSPS

EPA could also adopt an enforcement policy to discontinue the current practice of requiring a steel or iron ore production facility through an enforcement action to demonstrate compliance with limits on fugitive emissions from a plant production area or control device when limits are not set forth in the New Source Performance Standard (NSPS) for that source. Unless EPA changes the NSPS standards to specifically include numeric limits on fugitive emissions, it should not use language in enforcement action consent decrees to set emissions limits that were not adopted in NSPS notice-and-comment rulemaking. Currently, the NSPS does not have specific particulate matter numerical fugitive emissions limits, but rather sets opacity limits to ensure fugitive emissions are properly controlled. EPA is currently involved in a series of enforcement actions against several steelmaking facilities in Region 5 and has stated publicly that it does not like the published NSPS standards, and thus, is using the enforcement process to require Region 5 facilities to measure fugitive emissions in a manner in lieu of, and far beyond the NSPS-established opacity standards. This selective enforcement, in a single EPA Region, creates significant disparity in the applicability of the NSPS across the country and harms the competiveness of manufacturers operating in that Region.

Similarly, EPA should not use injunctive relief or mitigation as part of an enforcement action to require any steelmaking or iron ore processing facility to use a monitoring technology other than the EPA-approved Method 9 set forth in the NSPS, to evaluate compliance with the opacity standards. Again, EPA Region 5 is currently engaged in an enforcement strategy against steelmaking facilities in the Region seeking to have those facilities to install processes and technologies that are not set forth in the NSPS standards. This puts facilities in the Region at a legal and economic disadvantage to operations in other locations.

If EPA desires to change the NSPS requirements applicable to controls or fugitive particulate emissions from steelmaking facilities, it should amend the NSPS through public notice-and-comment rulemaking, rather than by selective enforcement which creates disparities in the industry and sidesteps the established rulemaking processes.

n. EPA Should Update the NSPS Opacity Standard

The opacity limit EPA utilizes under Subpart AAa, 40 C.F.R. Section 60.272a (a)(2) and (3), which mandates a 3 percent opacity limit for emissions from a control device as well as a 6 percent limit that applies to a steel plant s production area to which the control device is attached should be updated to 10 percent. The changes are appropriate because EPA concedes that both of these limits were somewhat arbitrary when established originally and because of the practical limitations of reading a 3 or 6 percent opacity using EPA-approved Method 9 methodology. The use of a continuous opacity monitor (COM) as allowed under 40 C.F.R. § 60.273a(c) also has a high margin of error in relation to the 3 and 6 percent limits, thus creating errors and misreading of opacity, without any environmental benefit. The standards setting organization ASTM, International has also identified COMs to be accurate only to the level of 10 percent opacity, making a 3 or 6 percent limit functionally impossible to accurately measure facility opacity for compliance purposes.[13]

o. Classification of Baghouse Dust as Hazardous Waste

Dust collected from the emission control devices employed during the primary production of steel in electric arc furnaces is listed as hazardous waste under the Resource Conservation and Recovery Act (RCRA)(K061) and requires use of a RCRA- permitted recycling facility to recover valuable commodities from the dust, such as zinc. AISI requests that K061 baghouse dust be delisted as a hazardous waste. The de-listing of K061 would allow for new, potentially significant opportunities for recycling and reuse of this waste stream without negative impacts on the environment. Baghouse dust would still be subject to being classified as a regulated waste if it is determined by analysis to have hazardous waste characteristics. While steel facilities currently manage their baghouse dust utilizing several RCRA-permitted recycling processes, AISI believes that if the waste was de-listed, additional recycling markets would quickly develop for this large-volume waste stream. The development of additional uses for and recycling strategies for non-hazardous baghouse dust will potentially eliminate significant annual costs and management burdens (labeling, training, placarding, storage limits, transportation challenges) associated with listed waste, without environmental detriment.

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[13] *See*, ASTM D 6216-98, *Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications*, ASTM International, West Conshohocken, Pa., 1998.

p. U.S. Army Corps of Engineers Wetland Permitting

The Army Corps is responsible for administration of Section 404 of the CWA, which covers permitting associated with impact to wetlands under federal jurisdiction. The 404 permitting process is currently one of the most ill-defined processes for a regulated party to understand and thus to predict permit timelines. This absence of a schedule is counter to a regulatory structure that fosters a balance between environmental protection and economic development.

Specifically, the Army Corps Section 404 process should be improved to include a publicly defined sequence of required steps and timelines to achieve each of them. As an example:

- The Section 106 consultation process obligates the Army Corps to consult federally recognized tribal entities during the permitting process. This has been a completely open-ended process where the Army Corps allows the consultation to occur indefinitely. The administration should impose three-month duration to allow consultation to occur, which is more than ample time for interested parties to understand and provide input on a potential wetland impact (most public comment processes default to a 30-60 day window).

Similar consultation processes are required with the U.S. Fish and Wildlife Service, the state Historical Preservation Offices and U.S. EPA. All of these processes can and should have defined windows of duration to build a sense of business certainty of how long it will take to get through a permitting process.

Elimination of the open-ended processes would also result in reduction of other collateral effects of the current permitting process, which industry has experienced taking two-to-six years to issue a new permit, and in one case, over seven years to simply amend an existing permit. Those collateral effects include things like repeated Endangered Species Act (ESA) reviews. Because the Army Corps process currently has no mandated or even target timelines, other processes required as part of the Section 404 permit, such as review for potential concerns with endangered species are never truly complete in the Army Corps eyes. When it takes the Army Corps anywhere from two-to-seven years to issue a permit, and species are added to the ESA list (*e.g.*, endangered, threatened), removed and sometimes re-

added to the ESA list, the Army Corps sees an obligation to go back to the drawing board and re-initiate the ESA analysis. Providing permitting structure and defining the process timeline for the consultation and permit processes improves permitting certainty, avoids delays and expending unnecessary resources and ultimately the prospects for economic.

3. Broader Regulatory Programs Impacting Domestic Manufacturing that are in Need of Reform

In response to EPA s request for broader existing or proposed regulatory programs that are outside the scope of facility permitting, AISI provides the following list of programs of most concern to its members. Where appropriate we provide potential alternatives but also stand ready to work with the appropriate EPA offices in crafting common sense, data-driven solutions. AISI also wishes to express its support for broader regulatory review and revision efforts the administration has already begun on matters of import to manufacturing in general, but also the domestic steel industry. These efforts include: EPA s recent decision to withdraw and reconsider or rewrite the 2015 final Waters of the U.S. rule; EPA s actions to place the litigation over the Clean Power Plan in abeyance and consider remand and review of the final regulations for new and existing EGUs; and EPA s actions to hold the litigation over the 2015 Ozone NAAQS in abeyance while the agency considers the appropriate actions in review of the final 70 ppb standard.

a. CERCLA Section 108b Financial Assurance Requirement for Hardrock Mining

On December 1, 2016, EPA proposed the first framework for financial assurance regulations under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 108b to address risks from hazardous substances.[14] In the same notice, EPA applied that framework to the hardrock mining sector, proposing specific standards for financial assurance on the industry sector. EPA is under a court deadline to promulgate a final rule by December 1, 2017. EPA s proposal calls for classes of facilities to establish and maintain evidence of financial responsibility consistent with the degree and duration of risk associated with the production, transportation, treatment, storage or disposal

[14] 82 Fed. Reg. 3388 (January 11, 2017); 40 C.F.R. Part 320.

of hazardous substances. This rulemaking is of significant interest across the mining sector and beyond, as it would very likely require significant financial resources to be moved out of operation and instead set aside for the potential future risk of hazardous contamination.

According to a notice that EPA issued in 2009 on this issue, hardrock mining is defined as the extraction, beneficiation or processing of metals (e.g., copper, gold, iron, lead, magnesium, molybdenum, silver, uranium and zinc) and nonmetallic, non-fuel minerals (e.g., asbestos, phosphate rock and sulfur). At that time, EPA decided to exclude 59 categories of mining from this definition, finding them to be low risk and thus not in need of financial assurance for CERCLA liability. Further, adequate state authority and regulations exist to cover any remediation costs associated with iron ore mining and preempt the need for redundant and oppressive federal financial assurance measures under CERCLA. AISI members in the iron ore mining sector have used EPA's own modeling to calculate the projected impact of this rule if it were to go final as proposed. The iron ore mining sector would likely incur over $8 billion in financial assurance obligations, which far outweighs the minimal risk of this mining sector poses. AISI and its impacted member companies in the iron ore mining sector believe the risk factors EPA used to exclude the other mining categories apply similarly to iron ore mining, which should also receive an exclusion from EPA.

b. EPA Draft Method for Specific Conductivity Criteria

On December 23, EPA issued its *Draft Field-Based Methods for Developing Aquatic Life Criteria for Specific Conductivity* ("Conductivity Guidance") (81 Fed. Reg. 94,370) (December 23, 2016), which purports to provide approaches for developing science-based conductivity criteria for flowing waters that reflect ecoregional- or state-specific factors. Once final, states and authorized tribes located in any region of the country may use the methods to develop field-based conductivity criteria for flowing waters. In 2011, EPA issued a similar conductivity "benchmark" for the Appalachian region – it was a chronic value of 300 micro-Siemens per centimeter (uS/cm). That equates to a Total Dissolved Solids (TDS) value of 192 ppm, which is an extremely low number that would be difficult to attain. The new EPA draft guidance takes the approach used in the Appalachian guidance and extends it to the rest of the country. Also, while the Appalachian guidance included only a chronic value, the new draft national guidance also includes acute values. Since the new document is actually a methodology, to be used with region-specific data, it does not provide specific

numbers for each region of the country, but it does contain four examples of how the methodology would be applied. The resulting values pose significant concerns for both AISI s□iron ore mining and steel making members and their operations. In addition to the flawed scientific issues in the draft methodology, there are significant practical issues as to how a facility could comply with the low levels resulting from the methodology. As the draft guidance rests on a flawed scientific basis and would impose enormous compliance costs, EPA should formally withdraw the draft guidance and inform Regional offices to not apply the methodology going forward until the scientific flaws of the methodology are addressed.

c. Hazardous Air Pollutant Standards for Major Sources

EPA is currently under court ordered deadlines to complete 33 Risk and Technology Reviews (RTRs) as mandated under CAA Section 112.[15] The deadlines to complete all 33 are staggered over approximately the next three years starting with an initial six RTRs by December 31, 2018, another 20 by March 13, 2020 and the final seven by June 30, 2020.[16] AISI and its impacted members have been engaged with EPA in reviewing the current Section 112 NESHAPs and have provided substantial amounts of emissions data and invested time and capital resources to ensure the final result of the review process accurately captures the industry s□risk profile.

Throughout the process of reviewing the Integrated Iron and Steel NESHAP (40 C.F.R. Part 63, Subpart FFFFF), EPA has insisted on collecting data and performing facility-wide risk review, including from non-category sources, *i.e.*, sources within the facility not regulated under Subpart FFFFF. Many of these non-category sources, such as coke ovens and steel pickling lines, have their own NESHAP standards making the additional risk modeling duplicative at best. AISI has numerous concerns with this approach and has expressed them to EPA in past meetings. Specifically, the data used to estimate risks from non-categorical sources in any facility-wide risk assessment is not subject to the same quality assurance and verification rigors as the data from Subpart FFFFF sources. For these reasons, AISI explained to EPA that the iron and steel industry has great concerns on the use of the

[15] 42 U.S.C. §§ 7412(d)(6), (f)(2).

[16] See *CA Communities Against Toxics v. EPA*, 1:15-cv-00512, U.S. Dist. Crt for DC Circ. (March 13, 2017) and *Blue Ridge Environmental Defense League v. EPA*, 1:16-cv-00364, U.S. Dist. Crt for DC Circ. (March 22, 2017)(setting final rule completion deadlines for Integrated Iron and Steel Sector, 40 C.F.R. Part 63, Subpart FFFFF and Taconite Iron Ore Processing, 40 C.F.R. Part 63, Subpart RRRRR amongst 31 other sector categories).

non-categorical data in assessing and aggregating the risks to develop a facility-wide risk, as such data are not necessarily representative of any actual risks from the sources in which the industry operates, especially since iron and steel facilities do not all share the same non- categorical sources. The emissions data AISI s□members provided EPA pursuant to the initial Information Collection Request (ICR) prescribed specific sampling and analytical criteria as well as quality assurance requirements. Data from non- categorical sources is generally not subject to the same standards as the Subpart FFFFF data, is frequently outdated and could lead to misinformation. EPA has acknowledged the difference in the data quality in past meetings but still intends and is currently conducting risk modeling from the non-categorical sources. Given the concerns expressed above with the quality of the data, value and potential for misinterpretation of results and compounded with current EPA time and resource constraints given looming deadlines as outlined above, AISI again requests that non-categorical emissions and risk data be excluded from review.

The taconite mining industry is subject to the Taconite Iron Ore Processing NESHAP (40 C.F.R. Part 63, Subpart RRRRR). On March 22, 2017 the U.S. District Court for the District of Columbia issued an order setting a deadline for EPA to complete its NESHAP Risk and Technology Review (RTR) for taconite and twelve other NESHAP affected industries by December 31, 2018 or June 30, 2020, depending on EPA s□category prioritization. Certain companies affected by the original Taconite NESHAP submitted a Petition to Delete (PTD) taconite as a source category regulated under Section 112 of the CAA in 2003 (along with supplemental information to EPA in 2006) because the HAP emissions associated with these facilities are low; do not represent an adverse impact on ambient air quality; and do not pose an unacceptable risk to human health or the environment as defined in Section 112 of the CAA. Therefore, as described in the PTD application, the taconite industry does not warrant regulation under the Section 112 NESHAP program. However, EPA has not completed its evaluation nor responded to the companies □PTD request. Prior to initiating the Taconite NESHAP RTR, EPA should review the information presented in the PTD request and determine that due to the industries □ow risk, all or portions of the category should be deleted from the Taconite NESHAP RTR.

d. Clean Air Act Regulatory Changes

AISI requests the following additional changes be made to various CAA programs:

- Add or strengthen EPA s specific requirement to consider costs and cost effectiveness when establishing new NAAQS, Maximum Achievable Control Technology (MACT) floor regulation, as well as State Implementation Plans (SIPs) control requirements.

- The CAA should be amended so that NAAQS are not required to be reviewed every five years, but extended to at least 10-15 years or consider that revisions to the NAAQS are of such significant that they should be required to be passed by Congress and not EPA.

- EPA should repeal the NSPS at 40 C.F.R. Part 60, Subparts N, Na. They are redundant and less restrictive than 40 C.F.R. Part 63, Subpart FFFFF. Subparts N and Na also require the use of obsolete technology (strip recorder charts) for tracking compliance data and reporting purposes. FFFFF is more effective at protecting the environment and recognizes available technologies exist and leave the means for tracking compliance data open.

- EPA should repeal its position (not found in law or regulation, only in guidance via an FAQ document) that non-EGUs must maintain Part 75 Continuous Emission Monitoring Systems (CEMS) monitoring even if the states are following EPA s lead and not including non-EGU s in the Cross State Air Pollution Rule (CSAPR) trading program. States can demonstrate that state-wide thresholds for NOx are met through means other than Part 75 monitoring, such as the use of emissions factors. It is unreasonable, burdensome and costly to maintain and replace (as necessary) CEMS monitors that are not otherwise legally required on non-EGUs.

- EPA should repeal the enforcement criteria in the Energy Star and other efficiency reward programs, which preclude a plant (or possibly even a corporation) from the program when one plant is in enforcement. Valid projects with environmental benefits should be considered because the enforcement is unrelated to the project. In addition, some enforcement actions take years to conclude, which makes plants ineligible for those same years.

e. NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters

As noted above, many steel facilities have numerous major source emission units subject to CAA Section 112 NESHAP requirements, including industrial boiler

and process heaters (40 C.F.R. Part 63, Subpart DDDDD). The requirement to test/tune/test each burner of each applicable source is a burdensome exercise. At many steel making facilities there are multiple finishing lines with indirect heating furnaces that are comprised of hundreds of natural gas fired burners each below 5 MMBTU/hour. These units are considered cumulatively under the Boiler MACT and are therefore required to have annual tune-ups per 40 C.F.R. § 63.7515(d). The annual tune-ups require excessive line outages and man hours. The annual requirement for testing and tuning of the many small burners can range up to $100,000 for a company with the time, equipment and proper skills to conduct the tuning. For natural gas sources with burner sizes less than a certain threshold, reducing the frequency of these tune-ups to every five years would significantly reduce the cost burden.

f. MACT "Once In, Always In" Policy

Facilities currently subject to CAA Section 112 NESHAP requirements should be afforded the opportunity to petition for removal of applicability if their potential to emit (PTE) has fallen below the major source thresholds in the CAA triggering requirements to employ MACT.[17] For example, one member facility once had coal-fired boilers that put the facility over the major source HAP threshold for Subpart DDDDD. After the boilers were permanently shut down, the PTE immediately fell below those thresholds, however the facility remains an affected source under the 40 C.F.R. Part 63, Subpart SSSS Surface Coating of Metal Coil. The permanent shutdown of the boilers brought the facility PTE down to Area Source thresholds, which require different emission control standards, specifically Generally Achievable Control Technology (GACT) and not the applicable MACT standards, which are more costly and directed at larger sources of air emissions.

Similarly, manufacturing facilities with emergency back-up generators onsite often find themselves subject to 40 C.F.R. Part 63, Subpart ZZZZ engine rules. These rules are intended to capture industrial engines that are much larger sources of HAPs than engines infrequently running back-up generators that typically produce minimal emissions.

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[17] *See* 42 U.S.C. § 7412(a)(1)(defining "Major Source" as sources with the potential to emit 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants).

One member facility whose back-up generators are subject to the Subpart ZZZZ NESHAP requirements reports the following emissions in 2016:

PM_{10}: 0.0002832 tons per year (tpy)
SO_2: 0.0002639 tpy
NO_x: 0.0039906 tpy
CO: 0.0008599 tpy
VOC: 0.0003180 tpy
Total: 0.005716 tpy

Having to monitor, report and maintain records for such a minimal emission source is not cost efficient. For a facility with five back-up generator engines it generally costs $500 ($100 per engine) per year to monitor, report and do maintenance as EPA requires, which amounts to $90,000 per ton of emissions to comply with the regulations. AISI members believe this type of cost is an unjustified burden on manufacturers given the actual emissions from these sources and limited times these engines are running.

g. Restore Start-up, Shutdown, and Malfunction (SSM) Protections

From the inception of the CAA, EPA promulgated regulations and approved SIPs that granted exemptions and affirmative defense provisions for emissions during SSM events. But through an overly broad and unsupportable interpretation of two recent court decisions,[18] EPA abruptly changed course and began a systemic process of eliminating existing SSM exemptions and affirmative defense provisions from various CAA regulations and previously- approved SIPs. Congress never intended for the EPA to eliminate SSM emergency exemptions that have existed and been successfully implemented for over 30 years. These exemptions provide certainty and flexibility for companies to lawfully maintain their equipment and, most importantly, to protect the safety of their workers and the surrounding communities without violating air permits.

AISI urges EPA to re-establish these important SSM exemptions that were removed from CAA regulations following EPA s□strained interpretations of the *Sierra Club* and *NRDC* decisions. The administration s□recent action to delay the ongoing

[18] *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008); *NRDC v. EPA*, 749 F.3d 1055 (D.C. Cir. 2014).

litigation over recalling 36 state SIPs based on SSM provisions in those plans is an important first step AISI applauds. We also support EPA s stated intention to review the legal rationale behind the decision to pull various SSM provisions from already approved SIPs.

h. Mandating Digital Camera Opacity Measurement Technique

EPA should not mandate industrial facilities to solely rely on the Digital Camera Opacity Technique (DCOT) for measuring opacity compliance as was done in the final Ferroalloys NESHAP and its reconsideration in January 2017. The existing Method 9 has been in place for many years and is a reliable methodology for measuring opacity at industrial facilities. The new DCOT technology has not been proven reliable or effective for measuring opacity from stack source emissions and should, therefore, not be extended to measure compliance for fugitive emissions from non-stack sources, such as the roof vents found at many of our members facilities.

Additionally, the DCOT technology is currently provided by a single vendor. Given that DCOT, to our knowledge, is not currently being used by either of the two facilities in the U.S. that exist in the ferroalloys industry as the means of verifying compliance with a regulatory opacity standard, the price for using it as a compliance measure is unknown. If EPA retains DCOT as the sole-source required compliance method, then basic economics would say the price will surely rise. Given the long term historical use of Method 9 inside and outside the ferroalloys industry, it is widely available to the regulated community through a broad network of EPA-approved testing vendors. The large network of Method 9 vendors helps to maintain a price that is stable and not exorbitant.

EPA also made this change to a compliance measurement approach through the Ferroalloy rule that applies to only two facilities. However, Method 9 s use for opacity standards has a much wider application than just for the ferroalloy industry. Therefore, if the agency wanted to make a change of this nature to such a central and widely used method, it should have more clearly done so as a wholesale change. This method change should have been formally proposed and received full public comment, with commenters aware of the full potential magnitude of this proposed change in compliance measurement. In seeking to establish DCOT for the ferroalloy industry, EPA did not follow its own guidance regarding broadly applicable test methods as spelled out in AISI s August 2016 comments on the reconsideration of the final Ferroalloy NESHAP. Given the concerns outlined here and in our formal

comments to Ferroalloy NESHAP reconsideration, AISI requests that EPA allow both DCOT and Method 9 as alternative opacity compliance measurement methods.

i. Formally Update EPA's Manganese Risk Level

EPA's long outdated inhalation reference concentration (RfC) for manganese and manganese compounds (Mn) that appears on the agency's Integrated Risk Information System (IRIS) website needs to be removed in accordance with EO 13777. Pending completion of a new IRIS review for Mn, AISI requests that EPA remove the Mn RfC from the IRIS website and replace it with a notation that refers to or incorporates the "minimal risk level" (MRL) developed by the U.S. Public Health Service's Agency for Toxic Substances and Disease Registry (ATSDR).

EPA developed the Mn RfC value in 1993, and it has not been revised or updated for more than two decades. Since that time, a substantial body of new scientific information has been developed concerning manganese toxicology. Several years ago when developing air toxics standards for the ferroalloys production sector, EPA recognized the outdated nature of the IRIS Mn RfC and the fact that it is no longer consistent with the latest and best available science. Accordingly, EPA ceased relying on the Mn RfC and opted instead to utilize the recently updated MRL developed by ATSDR. Further, in 2014, the EPA Office of Air Quality Planning and Standards revised its database of benchmark values for use in assessing risks from air emissions by replacing reference to the IRIS Mn RfC with the ATSDR MRL.

The agency's information quality (IQ) guidelines developed pursuant to the 2001 Information Quality Act impose a clear procedural and substantive obligation upon EPA to ensure the quality, objectivity, utility and integrity of all information disseminated by EPA. For the reasons outlined above, EPA's continued reliance upon the outdated Mn RfC on EPA's IRIS website does not meet those IQ obligations and it is therefore a prime target for elimination in accordance with the terms of EO 13777.

j. State Primacy in Regional Haze Program

In recent years, EPA has taken several actions that have dramatically increased the scope and reach of the visibility program by disapproving of SIPs to address regional haze and imposing Federal Implementation Plans (FIPs) in their place. In doing so, EPA has unlawfully expanded the regional haze FIPs beyond the

limits imposed in the CAA and beyond the scope of EPA s own implementing regulations. These efforts, in turn, have dramatically increased the regulatory burden on stationary sources currently subject to regional haze requirements and thereby imposed economic burdens on domestic manufactures.

While AISI supports reasonable and cost effective measures to improve visibility in Class I areas, it is critical that EPA and the states do so in a simple, straightforward, and flexible manner that reduces regulatory burdens and minimizes costs. The visibility program differs from most CAA programs because it is focused exclusively on aesthetic rather than human health concerns. As a result, it is even more imperative that EPA provide an adequate justification for imposing costly regulatory requirements on states and regulated sources. In the past, EPA has failed to do so and instead has issued FIPs that imposed billions of dollars in costs to regulated sources in order to achieve visibility benefits that EPA concedes would be imperceptible to the naked eye.[19]

States, regulated entities, and the courts have all expressed concern over the legality of EPA s aggressive approach toward implementing the regional haze program. In fact, the Fifth Circuit recently issued a stay of EPA s federal implementation plan after concluding that petitioners had a strong likelihood of showing that EPA exceeded its statutory authority by disapproving of Texas and Oklahoma s reasonable progress goals and establishing costly federal reasonable progress goals to take their place. *See State of Texas v. EPA*, 5th Cir. Case No. 16-60118, Doc. No. 513595283. In addition, on June 14, 2013, the Eighth Circuit Court granted Petitioners (Cliffs Natural Resources, ArcelorMittal USA LLC, and the state of Michigan) a judicial stay of the Taconite Regional Haze FIP pending final decision on the merits.

AISI encourages EPA to continue to look for ways to streamline and improve the regional haze program so that it can be efficient and effective without adding unnecessary requirements and burdens on states whose current efforts have led to meeting program glide paths and ultimately long-term visibility goals without imposing uncertainty and unnecessary regulatory burdens on individual facilities.

k. Triggers for Supplemental Environmental Impact Statements (EIS)

[19] Visibility changes of less than 1 deciview cannot be perceived by the naked eye. 77 Fed. Reg. at 30,250.

Triggers for Supplemental Environmental Impact Statements (EIS) □ Environmental Impact Statements have grown into review studies of staggering depth and scope and for the iron ore mining industry present years of time and millions of dollars in investment in preparation prior to initiating the permitting process. The breadth and depth required of these reviews should result in an assessment that is robust enough to serve for much of the activity undertaken by a mining operation. However, the federal language prompting the supplementing of an EIS grants enormous deference to the Responsible Governmental Unit to determine when such a study should be reopened and supplemented, a process which adds time and dollars again prior to the permitting process. The administration should adopt regulations that limit the conditions for supplementing an EIS to those where the existing state or federal permitting programs are unable to acknowledge any adjustments in project scope or environmental conditions during their respective permitting processes.

l. NPDES Authority - Groundwater Conduit Theory

AISI requests clarification that the CWA does not govern discharges to groundwater even if there is a subsurface hydrologic connection between groundwater and surface water. The text and legislative history of the CWA indicate that it was never intended to regulate discharges to groundwater. EPA has never adopted any formal position interpreting the CWA to require an NPDES permit for the discharge of pollutants to groundwater that is hydrologically connected to surface water.

AISI requests that EPA, in its rewrite of the WOTUS rule or through administrative guidance clarify that the NPDES program does not regulate discharges to groundwater, even if the groundwater is hydrologically connected to surface water.

m. Inclusion of Manganese on Drinking Water Contaminant List

AISI opposes EPA s□recent addition of manganese to the Drinking Water Contaminant Candidate List (CCL 4).[20] Inclusion on CCL 4 unnecessarily opens manganese up to development of a new drinking water standard as EPA is required

[20] *See* 81 Fed. Reg. 81099)(November 17, 2016).

to make a determination to regulate or not regulate at least five substances on the CCL every five years. As EPA openly acknowledges, manganese is an essential nutrient that is subject to strict homeostatic control in the human body. Large amounts of manganese are naturally present in many foods consumed as a part of a normal diet, so manganese in drinking water is unlikely to add materially to the normal daily ingestion of manganese from diet.

The science EPA identified in the CCL 4 listing concerning manganese and any potential risk it might pose as a constituent of drinking water does not support the addition of manganese to CCL 4. The purported link between the consumption of drinking water and development neurotoxicity is not sufficiently robust to warrant the development of drinking water standard for manganese. AISI, through its coalition the Manganese Interest Group (MiG) submitted substantial comments to EPA's CCL 4 docket in 2015 outlining the flaws in EPA's science justifying manganese's inclusion on the list and incorporates those comments by reference again here. Accordingly, AISI respectfully requests that manganese either be removed from the CCL list or EPA affirmatively determine a drinking water standard is not warranted.

n. Modification or Removal of Designated Uses/Water Quality Variances

The federal water quality regulations at 40 C.F.R. Section 131.10(g) provide that states may modify or remove designated uses, and sets out six factors that may be considered to support modification or removal of a designated use. Section 131.14 provides for site-specific water quality variances. Such variances must be supported with use attainability analyses and at least one of the six factors listed at Section 131.10(g). Such variances must provide that the highest attainable condition be achieved considering all feasible alternatives.

While Section 131.10(g)(6) provides for consideration of costs for changes in designated uses and water quality variances, the cost threshold is so high (substantial and widespread economic and social impact) that this factor can only be used in rare and unusual circumstances. The regulations do not allow for considering a balancing of costs and environmental benefits. There are circumstances where designated uses may be partially attained (*e.g.*, fish in attainment, macroinvertebrates not in attainment) and the investment and operating costs to attain full attainment are so high as to be unreasonable. The following addition to Section 131.10(g) is proposed to address this situation:

Section 131.10(g)(7). As determined by the Director, the costs to achieve full attainment of the designated use are wholly out of proportion to the environmental benefits that would be achieved from full attainment of the attainment use. The Director shall consider a site-specific use attainability analysis and the lowest cost to achieve the designated use for technically feasible alternatives.

o. Mass and Concentration Effluent Limits

Title 40 C.F.R. Section 122.45(f)(2) provides that NPDES permit effluent limits shall be in terms of mass (*e.g.*, lbs./day), and that permit writers may also establish effluent limits in terms of concentration. The categorical effluent limitations guidelines for many industrial categories are production-based, whereby a reasonable measure of actual production is used with the effluent limitations guidelines factors to calculate mass technology based effluent limits. The effluent limitations guidelines do not require attainment of any particular effluent flow or effluent concentration, so long as the mass technology based NPDES permit effluent limits are attained. When duplicative concentration effluent limits are established by permit writers without cause, the permittee is, in effect, placed in double jeopardy for effluent limit exceedances and the flexibility to use any combination of effluent flow and effluent concentration is removed.

To remedy this situation, the following modifications to 40 C.F.R. Section 125(f)(2) are proposed:

Section 122.45(f)(2). Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement for cause, and the permit shall require the permittee to comply with both limitations. The provisions of this section do not apply where production based effluent limitations guidelines and/or best professional judgment are used to determine the mass effluent limitations and the mass effluent limitations apply at an internal outfall or internal compliance monitoring point. In such cases, only the mass effluent limitation shall apply at the internal outfall or internal compliance monitoring point. Supplemental or additional concentration effluent limits may apply at the corresponding final outfall that discharges to a receiving water, as may be appropriate for water quality based effluent limits or other effluent limits derived by the permitting authority.

p. Other Water-Related Matters:

There are a number of other water-related actions that we would raise for specific comment:

- We have concerns regarding a number of issues with the recently released guidance on conducting fish consumption surveys.[21] We believe that this guidance should be reconsidered, and fully endorse the Federal Water Quality Coalition comments that were submitted on the draft guidance and are in the docket for that action.

- EPA should modify the NPDES and pretreatment rules to require a permitting authority to act on a variance request within 120 days from the time of application, or the variance is deemed granted. Further, EPA should modify the NPDES permit regulations so that short-term concentrations are not an issue if overall the mass loading is reduced; otherwise, diluting the concentration results in more total pollution to the waterbody.

- EPA should mandate public reviews during the Total Maximum Daily Load (TMDL) development process. Often facility managers do not see what the documents supporting the TMDL look like until they are final. It is unreasonable to expect permittees to comment on a TMDL during a permit review process, which gives the permittee little time to analyze and respond to the TMDL.

- AISI has concerns with EPA's proposed NPDES Application and Program Updates proposed rule, issued in May 2016 and not yet finalized.[22] We request that EPA issue a new proposal considering the significant comments received, especially regarding permit shields and permit reforms. We endorse the Federal Water Quality Coalition's comments submitted on this proposed rule, which are in the docket for this action.

- AISI also has concerns about certain aspects of the draft recommended aquatic life criteria for selenium and implementation guidance. We endorse the Federal Water Quality Coalition's comments submitted on this draft guidance, which are in the docket for this action.

q. TSCA Chemical Data Reporting

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[21] *See*, https://www.epa.gov/fish-tech/guidance-conducting-fish-consumption-surveys
[22] See 81 Fed. Reg. 31343 (May 18, 2016).

Under the Toxic Substances Control Act (TSCA) regulation, the Chemical Data Reporting (CDR) regulations require exceptionally detailed monitoring, recording, and reporting of the chemical make-up of our members steel and steel coatings, raw materials, downstream uses and downstream users, among other things.[23] Having to track all of the different industry sectors, customers and out processors that our steel touches is simply an inefficient use of valuable time without a concurrent benefit. It is overly burdensome to the steel industry to report on the general safety of a product that has been widely produced for several centuries and whose chemical makeup is well known and that poses little risk from exposure. AISI recommends exempting certain steel products from CDR reporting that are shown to pose little to zero risk from exposure. Our members report having to spend approximately 800 man-hours companywide to complete CDR reporting that would be better invested in addressing issues posing a higher risk potential.

r. TSCA Regulation of Asbestos

In December 2016, EPA announced that asbestos would be one of the first ten chemical substances to undergo a risk evaluation under the revised version of TSCA.[24] AISI supports regulations based on sound science that prevent harmful exposure to asbestos. Before EPA begins its asbestos risk evaluation, however, the agency must clearly define asbestos for the purposes of this risk evaluation and any subsequent risk management rulemaking. That definition must be sufficiently precise to differentiate asbestos from common, rock-forming elongated particles or cleavage fragments, which have not been found to cause health effects like those associated with asbestos. Providing a precise and accurate definition and analytical methods for asbestos will help to focus EPA s risk evaluation on harmful asbestos and asbestiform fibers, which present real risks to human health, and avoid diverting the agency s attention and resources away to non-asbestiform mineral particles that have not been shown to cause asbestos-related diseases.

In a presentation seeking public comment on the scope of risk evaluations, EPA stated it will adhere to the definition of asbestos set out in Title II of TSCA:

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[23] 40 C.F.R. Part 711.
[24] 81 Fed. Reg. 91927 (December 19, 2016).

> The term "asbestos" means asbestiform varieties of-- (A) chrysotile (serpentine), (B) crocidolite (riebeckite), (C) amosite (cummingtonite-grunerite), (D) anthophyllite, (E) tremolite, or (F) actinolite. (TSCA § 202(3))

AISI supports the continued use of this longstanding definition, additionally, in line with EPA's request for comments, we request the following recommendations to further clarify the scope of the TSCA risk assessment of asbestos:

1. AISI requests EPA to explicitly state in its pending asbestos regulation that "The term "asbestos" does not include cleavage fragments (sometimes used interchangeably with non-asbestiform elongate mineral particles)." This addition could be bolstered by including a definition of "cleavage fragments." One readily available definition is from Appendix B to OSHA's asbestos regulations (29 C.F.R. § 1910.1001), which excludes "cleavage fragments" defined as "mineral particles formed by comminution of minerals, especially those characterized by parallel sides and a moderate aspect ratio (usually less than 20:1)." Alternatively, EPA can define "asbestiform" to clearly exclude cleavage fragments. The National Stone, Sand and Gravel Association (NSSGA), for example, has proposed a workable definition of "asbestiform" as "the mineralogical habit or form of a mineral in which ultra fine single crystal fibers (fibrils) occur in bundles that can be separated into increasingly finer fiber bundles that typically display curvature." AISI requests EPA to exclude mineral particles with aspect ratios less than 20:1 from the "asbestiform" definition.

2. AISI also requests EPA explicitly state in its pending asbestos regulation that the agency will continue to define "asbestos containing material" to include only "material which contains more than 1 percent asbestos by weight."

s. Modify the Hazardous Waste Generator Improvements Rule

AISI has concerns with the recently issued Hazardous Waste Generator (HWG) Improvement's rule. EPA's rule includes some common-sense updates that will bring greater efficiency and clarity to the HWG regulatory program. However, we are concerned by other aspects of the rule. We are especially concerned by the change to the criteria under which a generator of hazardous waste is deemed in

violation of the Resource Conservation and Recovery Act (RCRA) permitting program applicable only to facilities that treat, store or dispose of hazardous waste (TSDFs). Under the new rule, failure to meet any one of EPA s long list of conditions for exemption could subject a generator to multiple violations and substantial penalties. Even a minor deviation in compliance would cause a generator to now be considered an illegal TSDF. We oppose this provision and request that the agency promptly change this provision through notice and comment rulemaking.

t. Duplicative Reporting Under Greenhouse Gas Reporting Program

Greenhouse gas (GHG) emissions are based on production and fuel usage data that are also reported in the annual Title V fee emissions reports.[25] Completing these reports adds approximately 350 man-hours companywide according to one AISI member with four domestic facilities, while many of AISI s members have upwards of 20 facilities in the U.S. The GHG Reporting Program requires either a mass balance approach or annual emissions testing to calculate emissions from basic oxygen furnaces and electric arc furnace (EAF) steelmaking operations. The mass balance approach is an impractical method for some facilities to use therefore, those members must annually tests their basic oxygen furnaces and EAFs. This testing costs approximately $120,000 companywide each year to complete and is duplicative to similar reporting conducted annually as part of the Title V permitting requirements. AISI recommends that EPA streamline these duplicative reporting programs and use data the agency already collected from facilities for use in the GHG Reporting Program.

[25] 40 C.F.R. Part 70.

Conclusion

Thank you for your attention on the important matter of addressing unnecessary regulatory burdens facing domestic manufacturing. AISI and its members are committed to working with the Trump Administration and its executive leadership in implementing common sense regulations and policies that are based on sound science and data and consistent with the statutory missions of each agency.

Respectfully submitted,



Thomas J. Gibson
President and CEO

From: Bolen, Brittany
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Regulatory Reform Meeting with Cummins
Start Date/Time: Wed 6/14/2017 5:00:00 PM
End Date/Time: Wed 6/14/2017 5:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Brian Mormino and Traci Kraus.

Contact:

Traci Kraus

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From: Traci Kraus [mailto:traci.kraus@cummins.com]

Sent: Wednesday, May 24, 2017 3:30 PM
To: Bolen, Brittany <bolen.brittany@epa.gov>
Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Subject: Introduction

Hi Brittany,

It was great to meet you at the Chamber meeting yesterday morning. I really appreciated hearing your perspective on all of the opportunities you and your team have at the agency. As we discussed, I work at Cummins and lead our government relations efforts on energy and environment issues, including truck and engine regulation for fuel efficiency and NOx.

I also mentioned that my colleague, Brian Mormino, was in town for meetings with the White House and your colleagues Ryan and Mandy (cc'd) at EPA to discuss some of these issues. I know we wanted to follow up with Mandy and keep you all in the loop on our discussions with the WH (Mike Catanzarro) regarding potential regulation streamlining and next-tier NOx, and I wanted to see if you might have time for a 30 minute meeting or call with me and Brian to fill you in on discussions.

From: Dominguez, Alexander
Location: 1200 Pennsylvania Avenue, NW (North) Please call 202.578.5985 for escort (3500)
Importance: Normal
Subject: Meeting - Corn Oil One / EPA
Start Date/Time: Wed 6/21/2017 6:30:00 PM
End Date/Time: Wed 6/21/2017 7:00:00 PM

Robert Riley, CEO of Corn Oil One, and Joseph Riley.

+ Meeting documents to follow

It will just be Bob and the only other addition may be Joseph Riley his son. Bob's full name is Robert G. Riley Jr.

I have asked about topics to be covered and I will get back to you.

Amy

-----Original Message-----

From: Dominguez, Alexander [mailto:dominguez.alexander@epa.gov]

Sent: Monday, June 05, 2017 9:35 AM

To: Exec Support - Robert Riley <rgriley2@feedenergy.com>

Subject: RE: Virtual Intro

Morning Amy,

It looks like Wednesday, June 21 at 2:00 will work best. Let me know if that works on your end and I will confirm. Will it be just Bob or will others be attending as well? If so, I will need all attendees full names to send to security. Additionally, if you could give a brief overview of the topics to be discussed and send over any materials that we should review beforehand that would be great. Any questions just let me know.

Best,

Alex Dominguez

Policy Analyst to the Senior Advisor to the Administrator for Air and Radiation

U.S. Environmental Protection Agency

1200 Pennsylvania Ave., N.W.

Washington, D.C. 20460

-----Original Message-----

From: Exec Support - Robert Riley [mailto:rgriley2@feedenergy.com]

Sent: Wednesday, May 31, 2017 2:46 PM

To: Dominguez, Alexander <dominguez.alexander@epa.gov>

Subject: RE: Virtual Intro

Yes, you are correct. I think I was thinking this meeting was to be held in DM while he was gone to DC. Yes, he will meet face to face in DC. Amy

-----Original Message-----

From: Dominguez, Alexander [mailto:dominguez.alexander@epa.gov]

Sent: Wednesday, May 31, 2017 1:43 PM

To: Exec Support - Robert Riley <rgriley2@feedenergy.com>

Cc: Palich, Christian <palich.christian@epa.gov>; Mogler, Devin (Ernst) <Devin_Mogler@ernst.senate.gov>; Bennett, Tate <Bennett.Tate@epa.gov>

Subject: Re: Virtual Intro

Hi Amy - I was informed this was going to be a face to face as Bob would be in DC the 21/22. If this is incorrect not a problem and we can do it over the phone.

Alex

Sent from my iPhone

> On May 31, 2017, at 1:25 PM, Exec Support - Robert Riley <rgriley2@feedenergy.com> wrote:

>

> Alex,

> I am Bob's assistant and he is out of town this week. I noticed there

> is to be some scheduling to be had the week of June 21st. Bob will

> again be out of state, leaving Monday evening and coming back on

> Thursday evening. Is this a meeting that he could participate in over

> the phone possibly or are there any other options for scheduling? Amy

>

> -----Original Message-----

> From: Dominguez, Alexander [mailto:dominguez.alexander@epa.gov]

> Sent: Wednesday, May 31, 2017 12:01 PM

> To: Robert Riley <rgrileyjr@feedenergy.com>

> Cc: Palich, Christian <palich.christian@epa.gov>; Mogler, Devin

> (Ernst) <Devin_Mogler@ernst.senate.gov>; Bennett, Tate

> <Bennett.Tate@epa.gov>

> Subject: RE: Virtual Intro

>

> Appreciate the intro Tate.

>

> Robert - Apologies for the delay. I am working on some potential times but currently looking like the 21st would work best. Will solidify shortly and get back with you.

>

> Best,

> Alex

>

> Alex Dominguez

> Policy Analyst to the Senior Advisor to the Administrator for Air and

> Radiation

>

> U.S. Environmental Protection Agency

> Work: 202-564-3164 | Cell: 202-578-5985 Dominguez.Alexander@epa.gov

>

>

> -----Original Message-----

> From: Bennett, Tate

> Sent: Wednesday, May 31, 2017 9:09 AM

> To: Mogler, Devin (Ernst) <Devin_Mogler@ernst.senate.gov>

> Cc: rgrileyjr@feedenergy.com; Dominguez, Alexander

> <dominguez.alexander@epa.gov>; Palich, Christian

> <palich.christian@epa.gov>

> Subject: Re: Virtual Intro

>

> Hey Robert! My colleague Alex (CC'd) can help provide us with some times that work for a meeting here at EPA. Standby.

>

>> On May 31, 2017, at 8:37 AM, Mogler, Devin (Ernst) <Devin_Mogler@ernst.senate.gov> wrote:

>>

>> Tate - meet Robert Riley, CEO of Corn Oil One.

>>

>> Robert- Tate is leading Congressional Affairs at EPA and Kurt Kovarik and I have her a brief rundown of the challenges you're encountering.

>>

>> I'll let the two of you take it from here to land on a time to meet face to face with the proper individuals on June 21/22.

>>

>> Regards,

>>

>> Devin

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with the State Policy Network
Start Date/Time: Fri 6/23/2017 2:00:00 PM
End Date/Time: Fri 6/23/2017 2:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

- Amy Oliver Cooke, Independence Institute (Colorado)
- Jason Hayes, Mackinac Center for Public Policy (Michigan)
- Todd Myers, Washington Policy Center
- Matt Anderson, Sutherland Institute (Utah)
- Brent Mead – Montana Policy Institute
- David Stevenson – Caesar Rodney Institute (Delaware)
- Mike Thompson – Thomas Jefferson Institute for Public Policy (Virginia)
- Dan Peters – James Madison Institute (Florida)
- Jennifer Butler, State Policy Network

Request: We would like to have a better understanding of EPA's plans to devolve more power back to the states and discuss ways to partner and prepare states for these changes.

Contact: Jennifer Butler |Senior Policy Advisor | State Policy Network | M: (561) 352-0011 | www.spn.org |butler@spn.org

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with GM to Discuss Fuel Economy Standards
Start Date/Time: Tue 6/27/2017 2:00:00 PM
End Date/Time: Tue 6/27/2017 2:30:00 PM

Directions: Please use the William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Request:

I'm GM's lead Republican managing our Federal team – I'm sorry that I don't think we've met in person yet. As you know, GM General Counsel and my boss GMNA VP for Public Policy met with the Administrator in April. I think that Mandy and Brittany were also in the meeting. We were hoping to schedule a meeting with the three of you and some of our technical folks from Detroit next week or the following regarding the fuel economy mid-term review and harmonization of EPA/NHTSA fuel economy standards.

Contact:
Victoria Emerson Barnes
Executive Director, Federal Affairs

GM – Public Policy - Global Government Relations

victoria.barnes@gm.com
T 202-775-5030 | C 202-697-1300

From: Bolen, Brittany
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with Honda
Start Date/Time: Thur 5/25/2017 8:00:00 PM
End Date/Time: Thur 5/25/2017 8:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 20 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Hi Carolyn -

Please see the note below from Brittany. Is there a time next Thursday afternoon (May 25) or Friday morning (May 26) that might work with Brittany for we at Honda to meet?

Thanks so much.

Ed

Edward B. Cohen, Vice President

Government & Industry Relations

Honda North America, Inc.

1001 G Street, NW-Suite 950

Washington, D.C. 20001

edward_cohen@hna.honda.com

Voice: (202) 661-4400

Fax: (202) 661-4459

----- Forwarded by Edward Cohen/HNA/AM/HONDA on 05/19/2017 03:03 PM -----

From: "Bolen, Brittany" <bolen.brittany@epa.gov>

To: "Edward_Cohen@hna.honda.com" <Edward_Cohen@hna.honda.com>,

Cc: "Inge, Carolyn" <Inge.Carolyn@epa.gov>

Date: 05/19/2017 02:45 PM

Subject: Re: Opportunity to Meet?

Hi Edward,

Thank you for your email. I hope Michal is doing well, I've been meaning to connect with her. I'm happy to meet with you and your colleague.

Please work with Carolyn (cc'd) to schedule a meeting for next week.

Best,

Brittany

> On May 19, 2017, at 12:56 PM, "Edward_Cohen@hna.honda.com"
<Edward_Cohen@hna.honda.com> wrote:
>
>
> Good afternoon Brittany -
>
> I am contacting you at the suggestion of Michal Freehoff who tells me
that
> you have the One National Standard for CAFE and GHG in your portfolio.
> Honda has done a fair amount of thinking about possible paths forward
that
> would avoid litigation and could help bring everyone to the table. We
also
> have had significant discussions with CARB and several key auto makers
> about some of the ideas and I believe we have an understanding of
> where some of these stakeholders stand.
>
> My colleague, Robert Bienenfeld who is based in California, will be in
> Washington at the end of next week, and if it is convenient for you,
> we would welcome the opportunity to talk.
>

> Please let me know if this is something you would like to do.

>

> I look forward to hearing from you.

>

> All the best.

>

> Ed

>

>

>

>

>

>

> Edward B. Cohen, Vice President

> Government & Industry Relations

> Honda North America, Inc.

> 1001 G Street, NW-Suite 950

> Washington, D.C. 20001

> edward_cohen@hna.honda.com

> Voice: (202) 661-4400

> Fax: (202) 661-4459

>

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Liz Roberts
Sent: Wed 5/24/2017 9:04:22 PM
Subject: RE: Great to meet you at ACC and Cocktails & Connections May Networking Reception Invitation

That sounds great!

Best,

Liz

From: Dravis, Samantha [mailto:dravis.samantha@epa.gov]
Sent: Wednesday, May 24, 2017 5:00 PM
To: Liz Roberts <lroberts@capitolineconsulting.com>
Subject: RE: Great to meet you at ACC and Cocktails & Connections May Networking Reception Invitation

Thanks, Liz! I really appreciate it. I will try to make it tomorrow, but if not, let's try to get a coffee set up soon.

Best,

Samantha

From: Liz Roberts [mailto:lroberts@capitolineconsulting.com]
Sent: Wednesday, May 24, 2017 4:40 PM
To: Dravis, Samantha <dravis.samantha@epa.gov>
Subject: Great to meet you at ACC and Cocktails & Connections May Networking Reception Invitation

Hi Samantha,

Just a quick note to say that it was great to meet you yesterday at ACC (we rode up in the elevator). I enjoyed your comments, which were very well received (by the way)!

I also wanted to pass along this invitation to a women's networking reception tomorrow night (sorry for the late notice!). This is a purely social group consisting of women in government and government affairs.

Hope you can make it!

All the best,

Liz

Liz Roberts

Principal

Capitoline Consulting

571-243-4807

www.capitolineconsulting.com

From: Liz Roberts [mailto:lroberts@capitolineconsulting.com]
Sent: Friday, May 12, 2017 5:41 PM
Cc: lizroberts@rocketmail.com
Subject: Cocktails & Connections May Networking Reception

Ladies,

Hope you can join us for the Cocktails & Connections May Networking Reception. Cocktails & Connections is an informal networking group that hosts purely social, non-political, and non-partisan networking events for women in government and government affairs.

Invitation information and RSVP details are below.

Look forward to seeing you on May 25th!

All the best,

Liz

*Join **Cocktails & Connections** hosts*

Sarah Blackwood, Jennifer Curley, Jenny DiJames, Kelli Emerick, Jill Hopper, Lisa Kountoupes, Tracy Nagelbush, Elizabeth Northrup, Allison O'Brien, Leigh Owano, Jennifer Reid, Liz Roberts, Stacey Shepard, Barbara Sutton, D'Anna Tindal, Leticia White, Kristina Wilcox & Judith Zink

for a

Networking Reception

Thursday, May 25, 2017 | 5:30 – 7:30 PM

Townhouse at 27 D Street, SE

Washington, DC, 20003

One block from the Capitol South Metro

Cocktails & Connections is an informal networking group that hosts purely social, non-political, and non-partisan networking events for women in government and government affairs in Washington, DC.

CLICK HERE TO RSVP

Please note that this event is invitation only and invitations are non-transferable.

SAVE THE DATE FOR UPCOMING EVENTS

July 27 * September 28 * November 30

This networking event has been organized to comply with congressional gift rules (House Rule 25.5(a)(4)(A) & Senate Rule 35.1(c)(22)). If you are required to pay for any portion of your participation for this networking event with Cocktails & Connections to facilitate compliance with

applicable gift and ethics requirements, please contact cocktails.connections.info@gmail.com.

Liz Roberts

Principal

Capitoline Consulting

571-243-4807

www.capitolineconsulting.com

To: Dravis, Samantha[dravis.samantha@epa.gov]; Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]; Bolen, Brittany[bolen.brittany@epa.gov]
Cc: Kime, Robin[Kime.Robin@epa.gov]; Kelly, Kerry[KKelly5@wm.com]
From: Kelly, Kerry
Sent: Thur 5/18/2017 2:00:40 PM
Subject: Contacts from Inside EPA

Dear Samantha, Brittany and Mandy:

I wanted to touch base with you to let you know we have been contacted by a reporter from Inside EPA about the letter we received from the Administrator regarding the Agency's intent to issue a 90-day stay relative to the MSW landfill Rules and reconsider certain issues. We did not want to release the letter prior to obtaining your direction on the matter, particularly as it has not been noticed in the Federal Register. I can simply speak with the reporter and indicate that we have received such a letter and look forward to continuing to work closely with the Agency, and refer them to the EPA press office for the letter itself. Just let me know what you prefer, and I will do it.

Warmly,

Kerry

I am working from home recovering from bronchitis and can be reached by phone at 703-548-4273 or cell at 571-377-9202 if you would like to talk.

Carter Lee "Kerry" Kelly

Senior Director, Federal Affairs

Kkelly5@wm.com

WM Waste Management

701 Pennsylvania Ave., NW, Ste 590

Washington, DC 20004

202.639.1218 office

571.377.9202 cell

Recycling is a good thing. Please recycle any printed emails.

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Marc Goldman
Sent: Tue 4/25/2017 11:04:45 PM
Subject: Study Calls EPA's Labeling CO2 A Pollutant 'Totally False' | The Daily Caller

http://dailycaller.com/2017/04/24/exclusive-new-study-calls-epas-labeling-of-co2-a-pollutant-totally-false/

To: Greenwalt, Sarah[greenwalt.sarah@epa.gov]; Brown, Byron[brown.byron@epa.gov]
Cc: Dravis, Samantha[dravis.samantha@epa.gov]
From: Drue Pearce
Sent: Tue 3/28/2017 4:06:40 PM
Subject: RE: Armstrong Oil and Gas in Alaska

Sarah and Samantha, we will plan to come at 11:15 Thursday after seeing Kate MacGregor at DOI. Please send particulars as to which entrance for clearance, etc. Thanks.
I'm going to send a calendar invite for our team and will copy both of you.
Mr. Kerr will be accompanied by our Anchorage Partner, Kyle Parker, and I'll likely be with them. we may also have Kelly Johnson, who is a partner here in DC. I was at Interior and she was at Justice in Bush 43; we look forward to meeting you two. (And Byron, too, when he's able.)
Drue Pearce

-----Original Message-----
From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Tuesday, March 28, 2017 8:17 AM
To: Drue Pearce <DPearce@hollandhart.com>; Brown, Byron <brown.byron@epa.gov>
Cc: Dravis, Samantha <dravis.samantha@epa.gov>
Subject: RE: Armstrong Oil and Gas in Alaska

Drue,

I would be happy to meet this Thursday morning around 11:15 or 11:30. Please let me know if that works for you.

Best,

Sarah A. Greenwalt
Senior Advisor to the Administrator
for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency
Work: 202-564-1722|Cell: 202-816-1388
Greenwalt.Sarah@epa.gov

-----Original Message-----
From: Drue Pearce [mailto:DPearce@hollandhart.com]
Sent: Tuesday, March 28, 2017 7:16 AM
To: Brown, Byron <brown.byron@epa.gov>
Cc: Dravis, Samantha <dravis.samantha@epa.gov>; Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Subject: Re: Armstrong Oil and Gas in Alaska

Samantha and Sarah, I wanted to let you know that Mr Kerr could meet tomorrow morning and until 12:30 or Thursday morning before 9:30 or after 11.
Thanks again for your consideration.
Drue Pearce

Sent from my iPhone

> On Mar 27, 2017, at 10:47, Drue Pearce <DPearce@hollandhart.com> wrote:
>
> Thank you, Byron. Obviously Jennifer didn't realized you were recused.
> Samantha and Sarah, could one or both of you meet with Mr. Ed Kerr Wednesday before 2:30 PM or

Thursday AM?
> Thanks in advance for your consideration. Reach me at DPearce@hollandhart.com or on my cell at 9072308558.
> Drue Pearce
>
> Drue Pearce
> Director of Government Affairs
> Holland & Hart LLP
> 1029 West Third Avenue, Suite 550
> Anchorage, AK 99501
> Phone (907) 865-2600
>
> 975 F Street, NW, Suite 900
> Washington, DC 20004
> Phone (202) 393-6500 (main)
> (202) 654-6911 (direct)
>
> E-mail: DPearce@hollandhart.com
> Cell: (907) 230-8558
>
>
> CONFIDENTIALITY NOTICE: This message is confidential and may be privileged. If you believe that this email has been sent to you in error, please reply to the sender that you received the message in error; then please delete this e-mail. Thank you.
>
> -----Original Message-----
> From: Brown, Byron [mailto:brown.byron@epa.gov]
> Sent: Monday, March 27, 2017 6:38 AM
> To: Drue Pearce <DPearce@hollandhart.com>
> Cc: Dravis, Samantha <dravis.samantha@epa.gov>; Greenwalt, Sarah <greenwalt.sarah@epa.gov>
> Subject: RE: Armstrong Oil and Gas in Alaska
>
> Drue -- I am recused from issues involving oil and gas exploration, so I am sending this request to Samantha Dravis and Sarah Greenwalt. Thanks. - Byron
>
>
> Byron R. Brown
> Deputy Chief of Staff for Policy
> Office of the Administrator
> U.S. Environmental Protection Agency
>
>
>
> -----Original Message-----
> From: Drue Pearce [mailto:DPearce@hollandhart.com]
> Sent: Monday, March 27, 2017 10:21 AM
> To: Brown, Byron <brown.byron@epa.gov>
> Subject: RE: Armstrong Oil and Gas in Alaska
>
> Byron, I was just informed that Mr. Kerr has changed his schedule and is now also available Wednesday morning but not after 2:30 PM Wednesday as well as Thursday morning.
>
> -----Original Message-----
> From: Drue Pearce
> Sent: Monday, March 27, 2017 5:10 AM
> To: Brown.byron@epa.gov

> Subject: Armstrong Oil and Gas in Alaska
>
> Byron,
> Jennifer Thompson and I worked together at Interior and then at the OFC; she gave me your contact information. She tells me you are familiar with Pebble and the controversies around the mine.
> I divide my time between Holland & Hart's Anchorage and D.C. offices. Denver based Armstrong with partner Repsol recently announced a major North Slope discovery on state lands that could extend the life of the TAPS pipeline for years.
> Me Ed Kerr of Armstrong will be in D.C. this week and would like to brief you about the discovery and development plans, which will require some wetlands disturbance. FYI, less than 0.5% of Alaska's wetlands have been disturbed since statehood.
> I'm writing to request a meeting with you for Mr Kerr either Wednesday afternoon or Thursday morning. Our Anchorage partner, Kyle Parker, will be with Ed.
> You can reach me by email at DPearce@hollandhart.com or on my cell at 907.230.8558.
> I apologize for the short notice.
>
> Drue Pearce
>
> Sent from my iPhone
>

To: Dravis, Samantha[dravis.samantha@epa.gov]
Cc: JP Freire[jpfreireepa@gmail.com]
From: Konkus, John
Sent: Tue 3/21/2017 9:07:36 PM
Subject: FW: : EPA set to resume cleanup at USS Lead Superfund site in East Chicago, Ind

JP and Samantha:

These answer were drafted by Region 5 and their attorneys. We are looking for guidance as to if we want to respond and if so if these answers are okay.

Ex. 5 - Deliberative Process

From: Milbourn, Cathy
Sent: Tuesday, March 21, 2017 4:56 PM
To: Konkus, John <konkus.john@epa.gov>
Subject: FW: : EPA set to resume cleanup at USS Lead Superfund site in East Chicago, Ind

From: Kelley, Jeff
Sent: Tuesday, March 21, 2017 4:20 PM
To: Milbourn, Cathy <Milbourn.Cathy@epa.gov>
Cc: Konkus, John <konkus.john@epa.gov>
Subject: RE: : EPA set to resume cleanup at USS Lead Superfund site in East Chicago, Ind

Here are draft answers … please let me know if we're good to go (reporters' deadline was about an hour ago):

Who are the potentially responsible parties involved in the settlement?

Ex. 5 - Deliberative Process

What changed to cause these PRPs to provide funds for Zone 2, which was previously in dispute?

Ex. 5 - Deliberative Process

How will the new funds be allocated in combination with the $26 million from the 2014 settlement?

Ex. 5 - Deliberative Process

Do these negotiations predate the current administration, or was this Administrator Pruitt's own initiative?

Ex. 5 - Deliberative Process

At what point does EPA have to amend the 2014 consent decree or ROD to reflect this new settlement? What about to reflect changes to clean-up plans in Zone 1? Does that amendment process take place in court and with public input?

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

The press releases says $16 million was secured, but as far as we can tell the final Z2&3 ASAOC only outlines $9.5 million to be paid by Respondents. Can you point us to the other $6.5 million or is there a mistake in the press release?

Ex. 5 - Deliberative Process

Are efforts ongoing to secure long term funding for Zone 2 remediation?



The Z2&3 ASAOC states no Z2 exterior removal actions shall commence after November 30, 2017— does this mean actions that have already started can be completed or does it mean no more work can be done after November 30?

Ex. 5 - Deliberative Process

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Kelley, Jeff

Sent: Tuesday, March 21, 2017 1:09 PM
To: Milbourn, Cathy <Milbourn.Cathy@epa.gov>
Cc: Konkus, John <konkus.john@epa.gov>
Subject: RE: : EPA set to resume cleanup at USS Lead Superfund site in East Chicago, Ind

Yes, working on it. John, do you want to see before we send? Below is one draft answer that I know we'd like you to take a look at since it mentions the Administrator.

Do these negotiations predate the current administration, or was this Administrator Pruitt's own initiative?

Ex. 5 - Deliberative Process

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Milbourn, Cathy
Sent: Tuesday, March 21, 2017 1:04 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>
Cc: Konkus, John <konkus.john@epa.gov>
Subject: FW: : EPA set to resume cleanup at USS Lead Superfund site in East Chicago, Ind

Jeff- are you going to add these to other list of Q's for this reporter?

From: Nick Janzen [mailto:njanzen@nipr.fm]
Sent: Tuesday, March 21, 2017 2:00 PM
To: Ropeik, Annie <aropeik@purdue.edu>
Cc: Milbourn, Cathy <Milbourn.Cathy@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>
Subject: Re: : EPA set to resume cleanup at USS Lead Superfund site in East Chicago, Ind

Hi Cathy and Jeff,

A couple of more questions:

- The press releases says $16 million was secured, but as far as we can tell the final Z2&3 ASAOC only outlines $9.5 million to be paid by Respondents. Can you point us to the other $6.5 million or is there a mistake in the press release?
- Are efforts ongoing to secure long term funding for Zone 2 remediation?
- The Z2&3 ASAOC states no Z2 exterior removal actions shall commence after November 30, 2017— does this mean actions that have already started can be completed or does it mean no more work can be done after November 30?

Just looking for some clarification here. Our deadline is still today at 3 PM ET. A phone interview would be preferable— if you're available for that, please call Annie at 765-494-0652 or 907-441-1419. A written response would still be very helpful, too.

Thanks so much for your help,

Nick

—

Nick Janzen
Energy and Environment Reporter

Indiana Public Broadcasting

email: njanzen@nipr.fm

cell: 504-914-3373

office: 260-918-1093

On Mar 20, 2017, at 5:22 PM, Ropeik, Annie <aropeik@purdue.edu> wrote:

Hi Cathy, thanks.

First and foremost, please provide a copy of the settlement. These next questions are in order of priority.

- Who are the potentially responsible parties involved in the settlement?
- What changed to cause these PRPs to provide funds for Zone 2, which was previously in dispute?
- How will the new funds be allocated in combination with the $26 million from the 2014 settlement?
- Do these negotiations predate the current administration, or was this Administrator Pruitt's own initiative?
- At what point does EPA have to amend the 2014 consent decree or ROD to reflect this new settlement? What about to reflect changes to clean-up plans in Zone 1? Does that amendment process take place in court and with public input?

Our deadline is **3pm Eastern Tuesday**, 3/21. Feel free to send answers or documents separately as you have them.

Best,

Annie Ropeik

--

Annie Ropeik
Reporter, Economy & Business

Indiana Public Broadcasting

(765) 494-0652 desk

(907) 441-1419 cell

From: "Milbourn, Cathy" <Milbourn.Cathy@epa.gov>
Date: Monday, March 20, 2017 at 5:05 PM
To: Annie Ropeik <aropeik@purdue.edu>
Cc: "Kelley, Jeff" <kelley.jeff@epa.gov>

Subject: : EPA set to resume cleanup at USS Lead Superfund site in East Chicago, Ind

Hi Anne,

Please send your questions in writing.

Thank you !

Cathy

From: Annie Ropeik <aropeik@purdue.edu>
Date: Monday, March 20, 2017 at 4:32 PM
To: "Milbourn.Cathy@epa.gov" <Milbourn.Cathy@epa.gov>
Cc: Nick Janzen <njanzen@nipr.fm>, "Bassler, Rachel" <Bassler.Rachel@epa.gov>
Subject: Re: EPA set to resume cleanup at USS Lead Superfund site in East Chicago, Ind.

Hi Cathy,

I'm one of the reporters covering East Chicago for Indiana Public Broadcasting. Can you please add the following emails to your distribution list, along with the Lakeshore address you used below:

- Me, business reporter Annie Ropeik - aropeik@purdue.edu
- digital producer Lauren Chapman - lchapman@wfyi.org
- environmental reporter Nick Janzen - njanzen@nipr.fm
- Managing editor Sarah Neal-Estes - snealest@indiana.edu

This will ensure your press releases get to us ASAP. We work alongside Lakeshore Public Media but are spread across the state.

Secondly, Nick Janzen (copied) and I have some follow-up questions about the release you sent, regarding the new $16M settlement, that we'd like to address in a telephone interview to be edited into soundbites for broadcast if possible. Could we do that tomorrow? If not, we can put questions in writing, but our deadline is 3:30pm ET Tuesday 3/21 either way.

Feel free to reach out any time — thank you!

Best,

Annie Ropeik

--

Annie Ropeik
Reporter, Economy & Business

Indiana Public Broadcasting

(765) 494-0652 desk

(907) 441-1419 cell

Catherine C. Milbourn

Office of Media Relations

Office of the Administrator

U.S. EPA HQ

202-564-7849 (office)

202-420-8648 (mobile)

Milbourn.cathy@epa.gov

To: Brown, Byron[brown.byron@epa.gov]; Dravis, Samantha[dravis.samantha@epa.gov]; Jackson, Ryan[jackson.ryan@epa.gov]; Konkus, John[konkus.john@epa.gov]
From: JP Freire
Sent: Tue 3/21/2017 12:55:51 AM
Subject: Re: Query from the Associated Press

Ex. 5 - Deliberative Process

On Mon, Mar 20, 2017 at 8:18 PM Konkus, John <konkus.john@epa.gov> wrote:

Ex. 5 - Deliberative Process

Begin forwarded message:

Resent-From: <Press@epa.gov>
From: "Elliott, Dan" <delliott@ap.org>
Date: March 20, 2017 at 8:15:36 PM EDT
To: Press <Press@epa.gov>
Subject: Query from the Associated Press

Greetings.

Has Administrator Pruitt reviewed the EPA's Jan. 13 decision that it could not pay any of the $1.2 billion in claims for economic damage and personal injury from the Gold King Mine spill in Colorado? Has he reached a decision?

During a Jan. 18 confirmation hearing before the Senate Committee on Environment and Public Works, Sen. John Barrasso asked him, "If confirmed, will you commit that you'll review that decision and use what ever authority is available to you under the law to help the people that have been harmed by EPA's negligence?" and he replied, "Yes, Mr. Chairman."

Thank you. My deadline is 5 p.m. ET Tuesday.

Dan Elliott

To: JP Freire[jpfreireepa@gmail.com]; Brown, Byron[brown.byron@epa.gov]; Dravis, Samantha[dravis.samantha@epa.gov]; Konkus, John[konkus.john@epa.gov]
From: Jackson, Ryan
Sent: Tue 3/21/2017 12:56:50 AM
Subject: RE: Query from the Associated Press

Ex. 5 - Deliberative Process

From: JP Freire [mailto:jpfreireepa@gmail.com]
Sent: Monday, March 20, 2017 8:56 PM
To: Brown, Byron <brown.byron@epa.gov>; Dravis, Samantha <dravis.samantha@epa.gov>; Jackson, Ryan <jackson.ryan@epa.gov>; Konkus, John <konkus.john@epa.gov>
Subject: Re: Query from the Associated Press

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Dan Elliott

To: Jackson, Ryan[jackson.ryan@epa.gov]; Brown, Byron[brown.byron@epa.gov]; jpfreireepa@gmail.com[jpfreireepa@gmail.com]; Dravis, Samantha[dravis.samantha@epa.gov]
From: Konkus, John
Sent: Tue 3/21/2017 12:18:42 AM
Subject: Fwd: Query from the Associated Press
image002.jpg
ATT00001.htm
removed.txt
ATT00002.htm

Ex. 5 - Deliberative Process

Begin forwarded message:

Resent-From: <Press@epa.gov>
From: "Elliott, Dan" <delliott@ap.org>
Date: March 20, 2017 at 8:15:36 PM EDT
To: Press <Press@epa.gov>
Subject: Query from the Associated Press

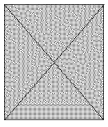
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Thank you. My deadline is 5 p.m. ET Tuesday.

Dan Elliott



Dan Elliott

303-825-0123 (Office)

720-390-8632 (Mobile)

delliott@ap.org
@DanElliottAP

http://bigstory.ap.org/content/dan-elliott

1120 Lincoln St.

Suite 901

Denver, CO 80203

ASSOCIATED PRESS

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Marie Sanderson
Sent: Tue 3/14/2017 3:52:16 PM
Subject: FW: Governors comment on EPA action

Hey- just flagging this again. We've been asked to help with govs. Going to start some outreach but wanted to make sure we didn't crossways. Thanks again 601 946 4529

From: Marie Sanderson
Sent: Monday, March 13, 2017 11:40 AM
To: 'Dravis, Samantha' <dravis.samantha@epa.gov>
Subject: Governors comment on EPA action

Hey there- per our convo- this is what we've been asked to do. It does go beyond what I represented as I review what we sent to me. Take a look and let me know if you are comfortable with our proceeding. Not trying to influence you here- flagging what was sent to me. My cell is 601 946 4529

Letters will request that the EPA Administrator set aside the Final Determination for Model Year 2022-2025 vehicle GHG standards that the previous EPA Administrator hastily issued just days prior to President Trump's inauguration.

Points from Governors, ideally, would be:

- Smart regulation is vital to a strong manufacturing sector
- Midterm review of the fuel economy standards was due to be finalized under Trump by April of 2018; last Administration jammed a political determination just days before leaving office
- Right thing to do to get back to the process – without prejudging the outcome
- So much is at stake, not just the success of this program but affordability and jobs
- Administration promised a pro jobs agenda; we're seeing it play out here

Trump Said Open to Relaxing Obama's Auto Fuel Efficiency

Targets

March 4, 2017 10:28AM ET | Bloomberg Government

(Bloomberg) -- The Trump administration plans to open the door to a possible reconsideration of greenhouse gas emission standards for cars and light trucks that has been sought by automakers, according to a person familiar with the plans.

The Environmental Protection Agency in the final days of the Obama administration decided to lock in the emissions standards through 2025 that had been negotiated with the industry in 2011.

That decision will be withdrawn for reconsideration as early as next week, said the person, who would only discuss the plans on the condition of anonymity because they have not been made public. An EPA spokeswoman declined to comment.

It will be one of a series of actions taken by the Trump administration recently to reconsider or reverse Obama-era regulations opposed by industry.

On Thursday, the EPA effectively abandoned work to dev elop a rule clamping down on methane releases from oil and gas wells and the Department of Transportation suspended work on a regulation requiring airlines to disclose fees for checking bags. Trump also just directed his agencies to rescind and rewrite an Obama-era environmental rule governing water pollution, after criticism from ranchers, farmers and developers.

Previous story: Carmakers' Plea for Fuel Economy Review Sets Stage for Showdown

Eighteen auto industry executives sent a letter to Trump in February, asking him to reinstate the review of fuel economy regulations. The EPA's decision in January to end the review came more than a year before deadline, which automakers say prematurely ended a promised debate over standards that they argue are costly and could jeopardize employment amid low gasoline prices which have boosted the appeal of sport utility vehicles and limited sales of hybrids and electric cars.

The companies and then-President Barack Obama had struck a deal in 2011 to double average fuel economy of vehicles across the U.S. car and light truck fleet to 54.5 miles per gallon by 2025, with the caveat that a mid-term review would determine whether the standards for the final years of the program were feasible.

Just a week before Trump took office, the EPA said it had concluded its review and the rules didn't need to be changed.

Automakers disagreed, saying falling gasoline prices had squelched demand for the most fuel-efficient vehicles, making achieving the standards more difficult.

The plea fro m the executives came after Trump made the automotive industry a major focus of

his first days as president. After a Jan. 24 meeting with auto executives, Trump vowed to ease regulatory burdens to lure more car factories to the U.S., calling environmental rules "out of control."

Midterm Evaluation

The withdrawal could come as early as next week in the form of a joint notice from EPA and the Transportation Department. As a result, the "midterm evaluation" of the efficiency standards through 2025 would resume, potentially leading to the relaxation of the standards desired by automakers.

Still, even if the EPA revisits the mid-term review, it won't necessarily come to a different conclusion than the one reached in Obama's final days in office. That decision was the culmination of an evaluation that began last summer with the publication of a more than 1,200-page Technical Assessment Report that examined costs, technology effectiveness, and othe r aspects of the standards.

Association of Global Automakers spokeswoman Annemarie Pender said the trade group, which represents 12 automakers including Toyota Motor Corp., Honda Motor Co., Nissan Motor Co. and Hyundai Motor Co., hasn't received a formal response to its Feb. 21 letter asking the EPA to withdraw the decision. The association declined to comment as did the Alliance of Automobile Manufacturers.

Environmental Push

"This is an all-out attack on environmental protection," Gina McCarthy, EPA administrator during Obama's second term, said of the potential fuel-standards move on MSNBC Saturday. "This latest news on clean cars is actually rolling back significant benefits that we have provided to people -- cleaner air, as well as addressing som e of the challenge we have with carbon pollution that's fueling climate change."

McCarthy derided the new administration's overall approach to the environment. The White House Office of Management and Budget this week recommended slashing the EPA's budget by 25 percent and eliminating thousands of jobs and more than a dozen programs.

'Core Values'

"I don't know why they've decided that our core values no longer include clean air and clean water, but that seems to be what this is about," McCarthy said.

On Friday, a coalition of environmental groups including the Sierra Club, Natural Resources Defense Council and Union of Concerned Scientists issued a joint statement urging the vehicle standards be maintained.

"EPA's clean car standards are driving unprecedented reductions in carbon pollution and saving

drivers money at the pump," Natural Resou rces Defense Council President Rhea Suh said in a statement. "Strong standards have been a critical factor in the auto industry's recovery from financial distress, so it makes no sense to reverse this progress. EPA should stay the course and look to the future, to protect our climate and the workers developing clean car technologies."

To change the standards, EPA must produce a new rule to replace the current one including notice and comment and raising the potential of a court challenge by environmental groups.

--With assistance from John Lippert and Michelle Jamrisko.

To contact the reporter on this story:
Ryan Beene in Washington at rbeene@bloomberg.net

From: Delahoyde, Magdelana A. EOP/WHO
Location: Cordell Hull, EEOB 208
Importance: Normal
Subject: NADA CAFE-GHG
Start Date/Time: Thur 12/7/2017 10:00:00 PM
End Date/Time: Thur 12/7/2017 11:00:00 PM

Meeting will be with the National Auto Dealers Association.

All WAVES information is being carried over to the new time and date, so no need to re-enter.

WAVES link: https://events.whitehouse.gov/?rid=32CCKBXRM6

From: George Cooper
Location: 3500 WJCN
Importance: Normal
Subject: Accepted: Meeting with National Marine Manufacturers to Discuss HFC 134a
Start Date/Time: Mon 10/16/2017 3:30:00 PM
End Date/Time: Mon 10/16/2017 4:00:00 PM

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Mon 11/20/2017 3:22:32 PM
Subject: Get specialty CLE credits at a discounted price before 2017 runs out

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Please call us at 703-372-0550

Our Mailing Address:
Clear Law Institute | 4601 N. Fairfax Dr., Ste 1200 | Arlington | VA | 22203
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Manage email preferences.

This email was sent to dravis.samantha@epa.gov. If you are receiving it in error, please reply to this email.

From: Brian Shine
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Declined: To be rescheduled: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/25/2017 1:30:00 PM
End Date/Time: Wed 10/25/2017 2:00:00 PM

;

To: Nickerson, William[Nickerson.William@epa.gov]
Cc: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Rees, Sarah[rees.sarah@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; Owens, Nicole[Owens.Nicole@epa.gov]; Lamson, Amy[Lamson.Amy@epa.gov]; Jutras, Nathaniel[Jutras.Nathaniel@epa.gov]
From: Dravis, Samantha
Sent: Mon 10/30/2017 9:46:25 PM
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 5965 - Final / OMB Review / Review #1 / OAR - 'RFS Volume Standards - 2018 and BBD for 2019')

Approved

Sent from my iPhone

On Oct 30, 2017, at 5:40 PM, William Nickerson <Nickerson.William@epamail.epa.gov> wrote:

> Approval for OMB Transmittal: Final - 'RFS Volume Standards - 2018 and BBD for 2019'
>
> This Policy Review is ready for OP Associate Administrator Approval.
>
> Link to Policy Review Document-> <doclink.gif>

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: National Geographic
Sent: Thur 10/19/2017 7:15:00 PM
Subject: Recap: Forum on Ocean Conservation

Recap: 10/18 Forum on Ocean Conservation

No Images?

During the second Mapping the World Public Policy Forum, National Geographic Society President and CEO **Gary E. Knell** convened a conversation between National Geographic Society Explorer-in-Residence and leader of the Pristine Seas project **Dr. Enric Sala** and Co-Chair of the bipartisan Senate Oceans Caucus **Senator Sheldon Whitehouse** of Rhode Island. Dr. Sala and Senator Whitehouse both provided insights into the connections between marine reserves, sustainable fishing practices, legislation focused on protecting our oceans, and the economy.

Please keep an eye out for an email from us with additional National Geographic resources on this issue. In the meantime, you can now download the ocean conservation fact & resource document we shared at the forum

LEARN MORE ABOUT MAPPING THE WORLD

Wednesday, May 3, 2017

GET THE FACTS

Wednesday, October 18, 2017

Details to Come

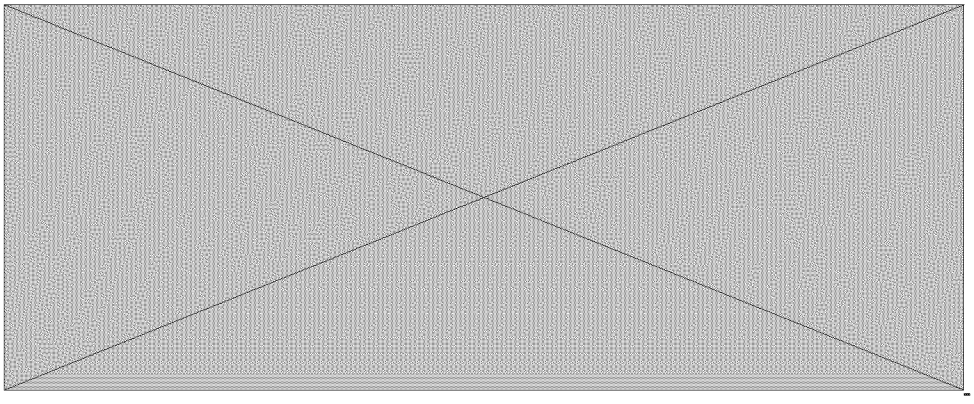


Add your company name
and postal address here

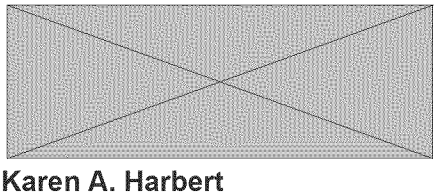
.

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Karen Harbert
Sent: Mon 10/30/2017 7:38:38 PM
Subject: My Op-Ed in USA Today

Dear Samantha:
Earlier this month the EPA issued a notice to withdraw the Clean Power Plan (CPP), a move the Global Energy Institute (GEI) supported. Suffocating energy producers with burdensome regulations and swamping states with federal mandates was not the answer to a cleaner energy future.
Now is the time to focus on technology and innovation as the best approach for reducing greenhouse gas emissions and mitigating the impacts of climate change.
American businesses have led and will continue to lead the world in technological advances and towards a future that recognizes the balance between affordable energy, a cleaner environment and a prosperous economy.
For more on innovation and CPP, please see my op-ed in *USA Today*.



Sincerely,

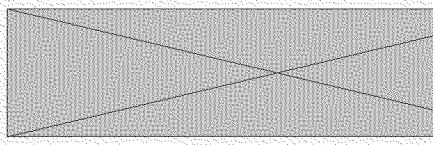


Karen A. Harbert
President and CEO
Global Energy Institute

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From: Microsoft Outlook
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting Forward Notification: Regulatory Reform Meeting with the National Association of Clean Water Agencies
Start Date/Time: Mon 11/20/2017 4:00:00 PM
End Date/Time: Mon 11/20/2017 4:30:00 PM

Your meeting was forwarded

Campbell, Ann has forwarded your meeting request to additional recipients.

Meeting

Regulatory Reform Meeting with the National Association of Clean Water Agencies

Meeting Time

Monday, November 20, 2017 11:00 AM-11:30 AM.

Recipients

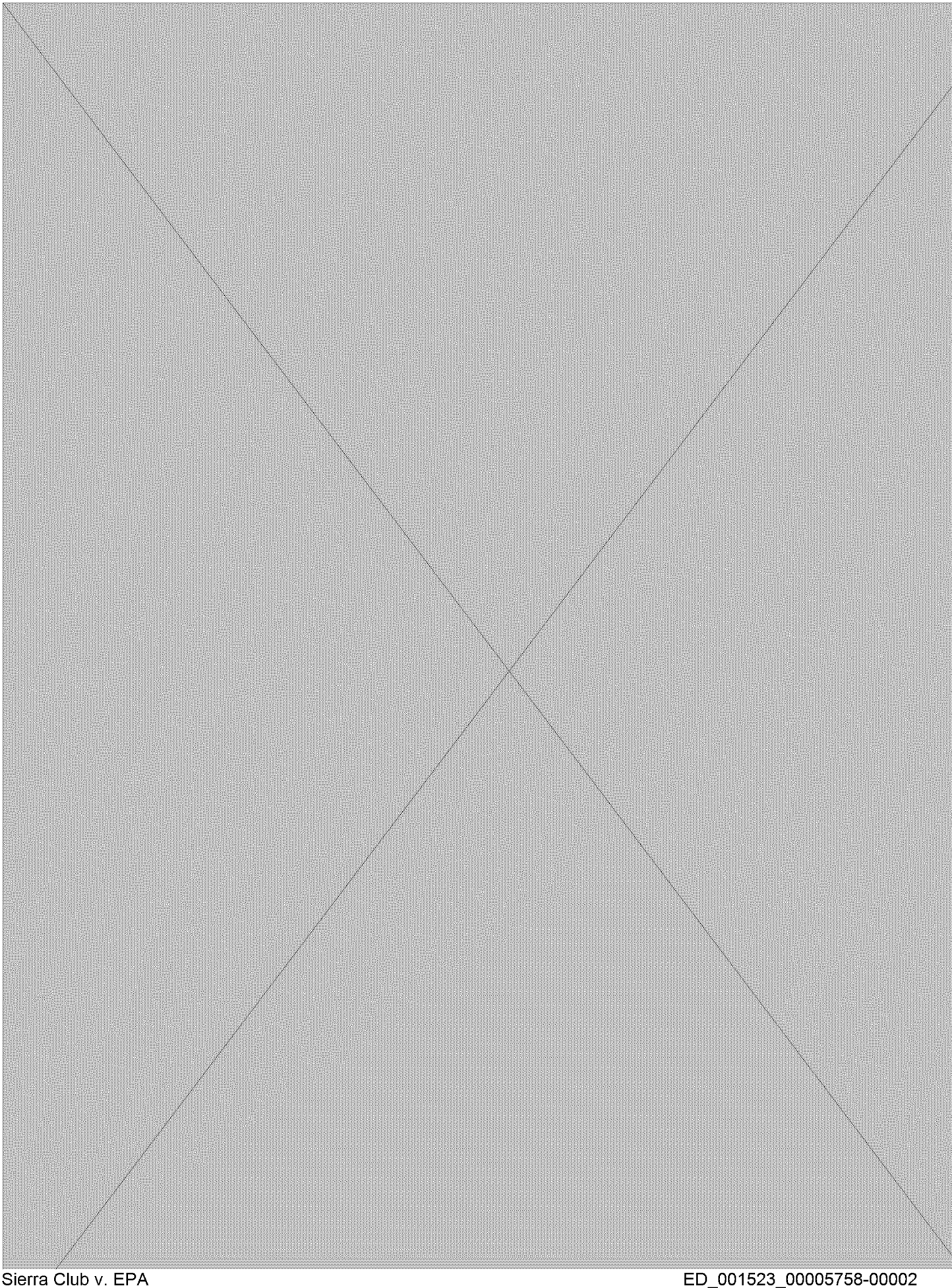
Sawyers, Andrew
Lousberg, Macara
Zobrist, Marcus
Kloss, Christopher

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Southern Company
Sent: Mon 12/4/2017 4:28:20 PM
Subject: Southern Company Holiday Reception Invitation, RSVP Required

Dear Samantha Dravis,



Come toast the season at Southern Company's holiday reception on

Wednesday, December 6, 2017 from 6:30-8:30 PM in the East Hall at Union Station.

Please RSVP using the link below.

This is a widely attended event and this invitation is non-transferable.

DUE TO SPACE CONSTRAINTS FOR THIS EVENT, UNION STATION WILL ENFORCE THAT ONLY INDIVIDUALS ON THE OFFICAL GUEST LIST WILL BE GRANTED ENTRY.

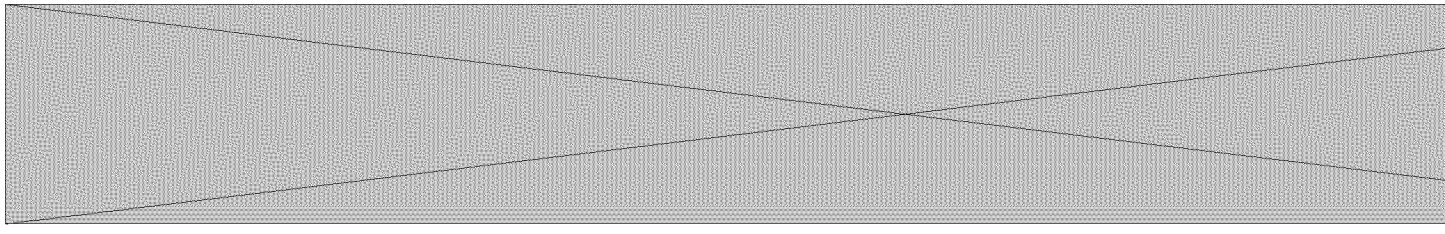
From Your Friends at Southern Company,

Bryan Anderson I Anne Asher I Noel Black I Melissa Horton I Adam Lawrence I
Martha Lushington I Olivia Lute I Jim McCool I Dan Murray I
Maggie Newton I Leroy Nix I Mike Riith I Jeff Sharkey I Jeanne Wolak

Alabama Power I Georgia Power I Gulf Power I Mississippi Power
Southern LINC I Southern Nuclear I Southern Power
Southern Company Gas I PowerSecure

Please bring an early reader book and/or children's hat & gloves or gift card to benefit Horton's Kids.

CLICK TO RSVP



Unsubscribe

From: Strobel, Kristin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: To be rescheduled: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/25/2017 1:30:00 PM
End Date/Time: Wed 10/25/2017 2:00:00 PM

To: Tejada, Matthew[Tejada.Matthew@epa.gov]
Cc: Dravis, Samantha[dravis.samantha@epa.gov]; jacinorris_eja@hotmail.com[jacinorris_EJA@hotmail.com]; Wallace, Maria[wallace.maria@epa.gov]
From: Jacqueline V. Norris
Sent: Wed 10/11/2017 7:25:07 PM
Subject: Re: Reorganization OEJ/OECA in EPA Office of Policy

Hi Matthew,

Let me know what you are thinking/or unsure about in writing especially as it relates to the new Draft FY 2018-2022) EPA Strategic Plan (Public Review Draft). You might want to start (how Policy/OEJ/OECA) will work as a unified team on --EPA's Mission: To Protect Human Health and the Environment (Goals 1-3).

How might this be worked out with headquarters and regions in that the regions (all) are working in communities and each has a different need to the goals.

Thanks for a quick reply and hope this helps!

Rev. Jacqueline V. Norris [Jaci]
Management Consultant
KeAnJa Prince George's Environmental Social Justice Marginalized Community Collaborative/Graduate EPA's Environmental Justice Academy/Certified Environmental Justice Academy Train-the-Trainer/EPA's Office of Environmental Justice & Sustainability partnership with Atlanta Metropolitan State College & Underserved Partnership Program
(240) 351.0983 (Cell)

On Wed, Oct 11, 2017 at 2:51 PM, Tejada, Matthew <Tejada.Matthew@epa.gov> wrote:

> Hello Jaci
>
> I'd be happy to hop on the phone with you in the next week or two to discuss your interests described below to see how we can best engage your request.
>
> Maria, will you please find a time in the next two weeks for me and Jaci to chat.
>
> Best,
>
> Matthew

Matthew Tejada

Director - Office of Environmental Justice

Environmental Protection Agency

202-564-8047

From: Jacqueline V. Norris [mailto:keanjagreen@gmail.com]
Sent: Wednesday, October 11, 2017 2:40 PM
To: Dravis, Samantha <dravis.samantha@epa.gov>; Tejada, Matthew <Tejada.Matthew@epa.gov>; jacinorris_eja@hotmail.com
Subject: Reorganization OEJ/OECA in EPA Office of Policy

Good Afternoon,

You had mentioned Office of Environmental Justice has now moved within the Office of Policy. As a faith-based ordained leader, I would like to discuss with other faith-based leaders, such as headquarters, regional offices, private entities, NEJAC/or the Federal Inter-Agency Environmental Justice Work Group has worked collaboratively on the below initiatives from September 2016 to present. This includes giving a brief outline how EPA and Inter-Agency Work Group will collaborate in the future from a "rule of law" or policy perspective being implemented/or modified?

Please provide case studies already funded/or ended in the last year.

Civil rights and environmental justice compliance plan

Applies to recipients of federal funding, public and private

1. Describe what do you plan to do

2. Analyze benefits and burdens on all people

Statistical and anecdotal evidence

GIS mapping and demographics

Define standards to measure progress and hold officials accountable

3. Analyze alternatives

4. Include people of color and low-income people

5. Implement a plan to distribute benefits and burdens fairly and avoid discrimination: both intentional discrimination, and unjustified discriminatory impacts.

Cordially,

Rev. Jacqueline V. Norris [Jaci]

Management Consultant

KeAnJa Prince George's Environmental Social Justice

Marginalized Community Collaborative/Graduate EPA's

Environmental Justice Academy/Certified Environmental Justice Academy Train-the-Trainer/EPA's Office of Environmental Justice & Sustainability partnership with Atlanta Metropolitan State College & Underserved Partnership Program

(240) 351.0983 (Cell)

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michelle Caudle
Sent: Mon 12/4/2017 3:34:07 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Michelle Caudle
P.O. Box 1572
Mannford, OK 74044

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Diane Davis
Sent: Tue 10/31/2017 5:23:08 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Diane Davis
2102 W Centre Ave
Artesia, NM 88210

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Mon 11/20/2017 12:22:17 AM
Subject: Upcoming Webcasts from ALI CLE | November 21 - December 7

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UPCOMING WEBCASTS

Take a look at ALI CLE's upcoming audio and video webcasts. From latest developments to ethics to skills courses, we have a variety of programs to choose from. Find the one that best fits your needs!

Contract Drafting Traps for the Unwary: Limitation of Liability Provisions	November 21
Don't Hit Delete: Electronic Record Retention in the Workplace	November 21
Estate Planning in Depth: Special Needs Planning - Securing the Future of Persons Challenged by Disabilities	November 28
Get Organized and Get Things Done: Practical Time Management for Lawyers	November 29
Rules of Engagement: Ethical Considerations for Engagement Agreements	November 30
Clean Water Act: Law and Regulation	December 4 - 5
Legal Opinions in Real Estate Transactions: What You Need To Know	December 5
Planning for Incapacity: Financial Powers of Attorney, Health Care Directives, and Ethical Challenges	December 6
Contract Drafting Traps for the Unwary: Confidentiality Agreements	December 7
Microsoft Word for Litigators	December 7

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This email was sent to dravis.samantha@epa.gov by American Law Institute Continuing Legal Education.

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From: Moore, Kristina
Location: 3513A
Importance: Normal
Subject: Accepted: Meeting with Kristina Moore
Start Date/Time: Mon 11/6/2017 4:00:00 PM
End Date/Time: Mon 11/6/2017 4:30:00 PM

..
;;

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Kevin Crockett
Sent: Tue 10/31/2017 5:05:44 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Kevin Crockett
55 W. Crockett Road
Lovington, NM 88260

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Heather Bodenhamer
Sent: Fri 9/29/2017 2:07:42 PM
Subject: Re: Data Analytics @ EPA

Hi Samantha,

Thank you for letting me know you are not the correct contact. I will update our records and will not email you in the future.

Best,

Heather.

On Thu, Sep 28, 2017 at 1:26 PM, Dravis, Samantha <dravis.samantha@epa.gov> wrote:

> Please stop emailing me. I don't accept solicitations and am indeed not the right person to direct these inquiries to.
>
> Sent from my iPhone
>
> On Sep 28, 2017, at 1:25 PM, Heather Bodenhamer <heather.bodenhamer@cloudera.com> wrote:
>
>> Hi Samantha,
>>
>> If you are not the best person to speak to at EPA regarding big data and advanced analytics, could you please let me know who that is so I can update my records?
>>
>> Thank you,
>> Heather
>>
>> Heather Bodenhamer
>> **Federal Development**
>> **D** (703) 991-7757 **M** (202) 215-0009 |
>> l. linkedin.com/in/hbod23
>> Learn about Hadoop | Read our Blog | Download Cloudera
>>
>> On Tue, Sep 26, 2017 at 10:23 am, Heather Bodenhamer wrote:
>> Hi Samantha,
>>
>> I was going through our system and came across your information. It seems we may have reached out to you some time ago and at that time, you weren't working on any

relevant projects at EPA but I wanted to see if anything has changed. If so, could we possibly reconnect?

I'd like to learn more about your current projects and initiatives regarding data management, analytics, cybersecurity, and machine learning.

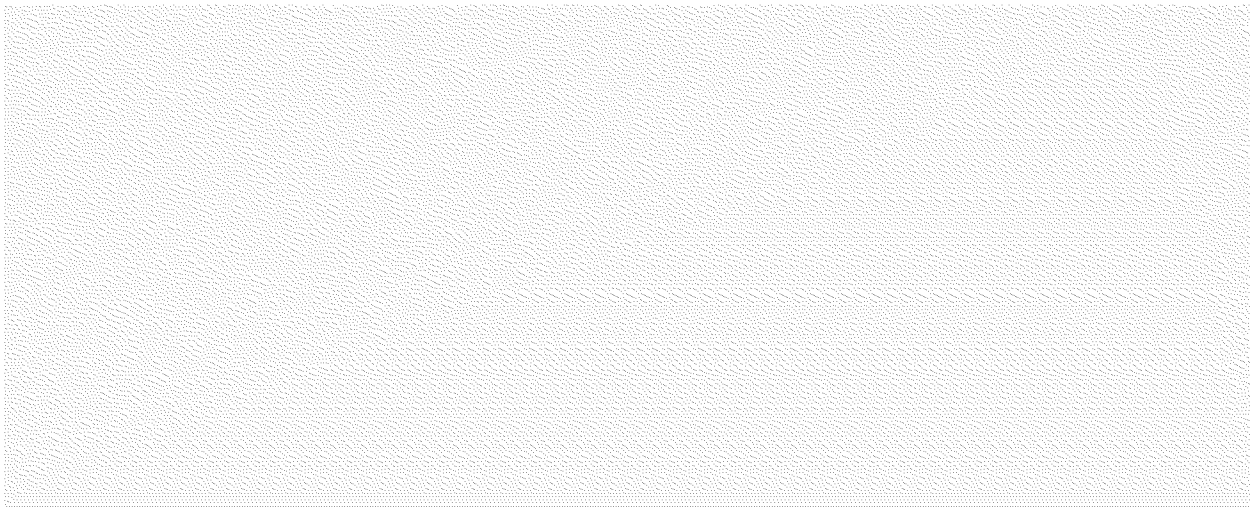
What does your schedule look like in the upcoming weeks?

Best,
Heather

Heather Bodenhamer
Federal Development
D (703) 991-7757 **M** (202) 215-0009 |
l. linkedin.com/in/hbod23
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--
Heather Bodenhamer
Federal Operations
D (703) 991-7757 M (202) 215-0009 |
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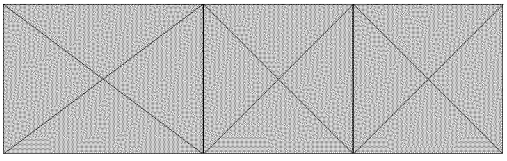
To: Dravis, Samantha[dravis.samantha@epa.gov]
From: InsideSources
Sent: Mon 12/4/2017 2:07:49 PM
Subject: EPA Kicks Out InsideSources Reporter From Event With Pruitt

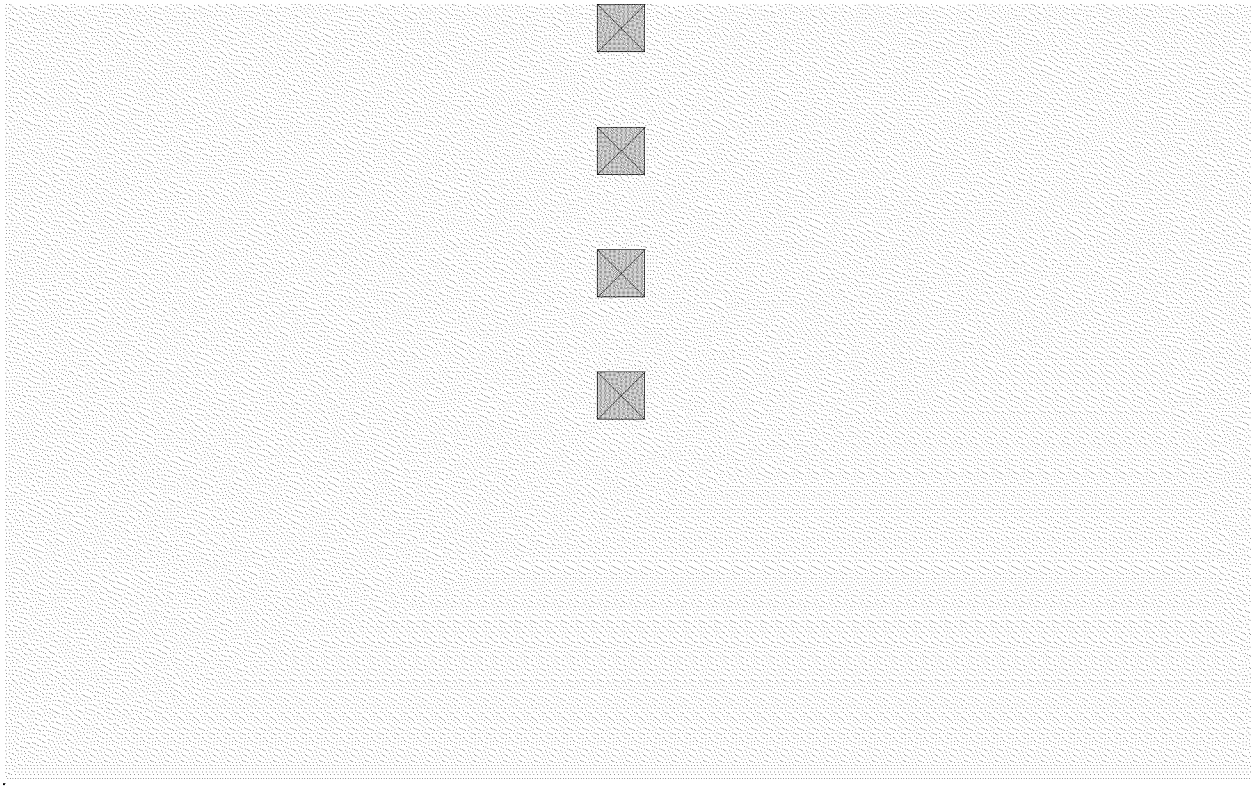












To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Constance Chan
Sent: Tue 10/31/2017 5:01:14 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Constance Chan
2828 N Harwood St Ste 1300
Dallas, TX 75201

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Mon 12/4/2017 2:05:53 PM
Subject: Date Correction: Legal Ethics of Email and Social Media, 12/14

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Provides 2 hours of ethics instruction

Legal Ethics of Email and Social Media

Thursday, December 14, 2017 | 1:00 - 3:00 p.m. Eastern

Video Webcast

Recorded July 18, 2017

The internet – particularly email and social media – can be a "virtual" minefield for ethical violations surrounding your duty of confidentiality, inadvertent waiver of the attorney-client privilege, and so much more. How can you be sure that you don't violate the rules of professional conduct?

This crucial webcast will discuss the frequently encountered ethical issues that can arise when lawyers use email and social media by focusing on:

- Communications with clients, in the corporate setting, and with adversaries
- Creation and termination of the attorney-client relationship
- Working with others
- Discovery
- Jurors and judges' use of electronic communications and social media
- Online marketing

Register today for this essential webcast! Register two or more from your organization and **save**.

Faculty

Thomas E. Spahn, McGuireWoods LLP, Tysons, Virginia

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Dennis Chavez
Sent: Tue 10/31/2017 4:58:06 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Dennis Chavez
P.O. Box 842
Moriarty, NM 87035

To: Dravis, Samantha[dravis.samantha@epa.gov]; Tejada, Matthew[Tejada.Matthew@epa.gov]; jacinorris_eja@hotmail.com[jacinorris_EJA@hotmail.com]
From: Jacqueline V. Norris
Sent: Wed 10/11/2017 6:39:56 PM
Subject: Reorganization OEJ/OECA in EPA Office of Policy

Good Afternoon,

You had mentioned Office of Environmental Justice has now moved within the Office of Policy. As a faith-based ordained leader, I would like to discuss with other faith-based leaders, such as headquarters, regional offices, private entities, NEJAC/or the Federal Inter-Agency Environmental Justice Work Group has worked collaboratively on the below initiatives from September 2016 to present. This includes giving a brief outline how EPA and Inter-Agency Work Group will collaborate in the future from a "rule of law" or policy perspective being implemented/or modified?

Please provide case studies already funded/or ended in the last year.

Civil rights and environmental justice compliance plan

Applies to recipients of federal funding, public and private

1. Describe what do you plan to do

2. Analyze benefits and burdens on all people

Statistical and anecdotal evidence

GIS mapping and demographics

Define standards to measure progress and hold officials accountable

3. Analyze alternatives

4. Include people of color and low-income people

5. Implement a plan to distribute benefits and burdens fairly and avoid discrimination: both intentional discrimination, and unjustified discriminatory impacts.

Cordially,

Rev. Jacqueline V. Norris [Jaci]
Management Consultant
KeAnJa Prince George's Environmental Social Justice Marginalized Community Collaborative/Graduate EPA's Environmental Justice Academy/Certified Environmental Justice Academy Train-the-Trainer/EPA's Office of Environmental Justice & Sustainability partnership with Atlanta Metropolitan State College & Underserved Partnership Program
(240) 351.0983 (Cell)

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Thur 10/19/2017 3:20:20 PM
Subject: Cloud Computing: What you need to get started

Please add ALICLE@learn.ali-cle.org to your address book. Thank you.
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Cloud Computing Fundamentals for Lawyers

Wednesday, November 8, 2017 | 1:00 - 2:00 p.m. Eastern
Video Webcast
Recorded August 3, 2017

Do you want to reduce firm costs, improve efficiency, and offer better client service? If you haven't done it yet, it's time to make more use of cloud-based applications or storage in your practice!

In this one hour video, technology trainer Craig Brody will review the fundamentals of using the cloud by addressing:

- Advantages and disadvantage of cloud computing
- File storage and the differences between Microsoft OneDrive, Google Drive, and Dropbox
- How to upload, organize, search, and share files
- General cloud-based applications: Microsoft Office 365 vs. Google Apps
- An overview of cloud-based law practice management software

Register today for this practical seminar. Register two or more from your organization and **save**.

Faculty

Craig Brody, C. Brody Associates, LLC, Philadelphia

Group Rate

Significant discounts are available when two or more registrants in the same physical location view or listen to an ALI CLE webcast or telephone seminar using one computer connection or telephone. **Save up to 50%**!

Questions?

Please don't hesitate to email us any questions you may have at **custserv@ali-cle.org**

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Mark Williams
Sent: Tue 10/31/2017 4:57:32 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Mark Williams
5426 E. 104th Pl.
Tulsa, OK 74137

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Nolan, Rich
Sent: Thur 10/19/2017 3:19:01 PM
Subject: RE: NMA Environment Committee meeting Oct 16 or 17

She did great! Thank you so much. Rich

From: Dravis, Samantha [mailto:dravis.samantha@epa.gov]
Sent: Thursday, October 19, 2017 10:09 AM
To: Nolan, Rich <RNolan@nma.org>
Subject: RE: NMA Environment Committee meeting Oct 16 or 17

Rich,

I am so sorry I wasn't able to make it, but am glad Brittany was able to fill in – hope you guys enjoyed hearing from her. Thanks again for the invite and please include me on future events!

From: Nolan, Rich [mailto:RNolan@nma.org]
Sent: Tuesday, October 17, 2017 10:33 AM
To: Dravis, Samantha <dravis.samantha@epa.gov>
Subject: RE: NMA Environment Committee meeting Oct 16 or 17

Samantha,

If Brittany can make that would be very helpful as well. Hope all is OK.

Thanks so much, Rich

From: Dravis, Samantha [mailto:dravis.samantha@epa.gov]
Sent: Tuesday, October 17, 2017 10:17 AM
To: Nolan, Rich <RNolan@nma.org>
Subject: RE: NMA Environment Committee meeting Oct 16 or 17

Hey, can you give me a call? The front desk keeps transferring me to voicemail. I am terribly sorry but something has come up and I can't make it over there at noon today – it's possible that Brittany can fill in but not sure at this point.

From: Nolan, Rich [mailto:RNolan@nma.org]
Sent: Tuesday, September 12, 2017 8:35 PM
To: Dravis, Samantha <dravis.samantha@epa.gov>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Bridgeford, Tawny <TBridgeford@nma.org>; Kime, Robin <Kime.Robin@epa.gov>
Subject: RE: NMA Environment Committee meeting Oct 16 or 17

Samantha, terrific! Thank you.

From: Dravis, Samantha [mailto:dravis.samantha@epa.gov]
Sent: Tuesday, September 12, 2017 4:28 PM
To: Nolan, Rich <RNolan@nma.org>; Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Bridgeford, Tawny <TBridgeford@nma.org>; Kime, Robin <Kime.Robin@epa.gov>
Subject: RE: NMA Environment Committee meeting Oct 16 or 17

Thanks for the invitation, Rich. As of now, I should be able to make that work. Copying in Robin who can get further details from you.

Best,

Samantha

From: Nolan, Rich [mailto:RNolan@nma.org]
Sent: Tuesday, September 12, 2017 2:12 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Dravis, Samantha <dravis.samantha@epa.gov>
Cc: Bridgeford, Tawny <TBridgeford@nma.org>
Subject: NMA Environment Committee meeting Oct 16 or 17

Hi Ryan and Samantha, attached is a formal invitation to speak with our environment committee in DC on Oct. 16 or 17 at the Renaissance Washington, D.C. Downtown Hotel located at 999 Ninth Street, N.W. This is a friendly group and very supportive. Hoping this may fit in one of your calendars or if you could send another suitable EPA representative. Hope you are doing well. Thank you for your attention to this request. Rich

Rich Nolan
Senior Vice President, Government and Political Affairs
National Mining Association
101 Constitution Ave. NW, Suite 500 East
Washington, D.C. 20001
Phone: (202) 463-2600
Direct: (202) 463-3241
rnolan@nma.org

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Craig Biery
Sent: Tue 10/31/2017 4:47:58 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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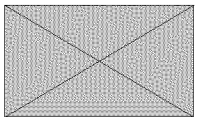
Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Craig Biery
6308 Yorkdale Drive
Plano, TX 75093

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Jack Gerard, API
Sent: Wed 11/29/2017 2:28:50 PM
Subject: Natural Gas Brings Reliability, Affordability to Electric Grid

Click to view this email in a browser



November 29, 2017

Dear Samantha,

U.S. electricity increasingly is produced by natural gas, and consumers are benefitting. Natural gas-fired generation has not only lowered costs for consumers and played a lead role in cutting U.S. carbon emissions, it's enhanced the reliability and resilience of America's electric power system. The unique attributes and flexibility of generation resources powered by natural gas can provide baseload power, and power plants that run on natural gas can also quickly adjust to efficiently interact with other power sources to meet changing power needs throughout the day.

Competitive markets for power are working, providing affordable, reliable and safe electricity to homes and businesses. But a proposal under review by the Federal Energy Regulatory Commission (FERC) could fundamentally alter those outcomes, potentially altering the electricity market based on criteria that will not necessarily contribute to grid resilience.

A large and varied coalition of organizations is speaking out about the downside of government intervention in electricity markets. Take a look at the concerns:

U.S. Manufacturers (represented by the Electricity Consumers Resource Council, American Chemistry Council, American Forest & Paper Association, American Iron and Steel Institute, and a number of state industrial energy groups): "If implemented, the Proposal would override the market's ability to select the most efficient units, increase the electricity costs by many millions of dollars for untold numbers of businesses and consumers, and result in substantial loss of U.S. manufacturing capacity of jobs… The Proposal would subsidize coal and nuclear generation and their jobs, putting at risk a far larger number of U.S. manufacturing jobs that face considerable pressure from foreign competition."

American Council on Renewable Energy: "We're hopeful that FERC will rule against an anti-competitive distortion of the electricity marketplace and avoid new unnecessary initiatives that increase power prices for American consumers and businesses."

Former FERC member, Nora Mead Brownell: "Let's think about those people who pay the bills at the end of the day, because these are things that affect their lives. … When we're asking for customers to pay for something, we better make sure they're getting value. … To lose that to invest in a mature industry, in mature technologies that are not adding the value we need in terms of efficiency, resilience… and reliability is really just a tax on customers." Additionally, eight former FERC Commissioners submitted comments strongly opposing the proposed rule and the negative consequences resulting from its adoption.

While multiple forms of power generation have a role in America's energy mix, the competitive market, not government intervention, is the best way to ensure the optimal outcome for consumers. Markets are driving the development of a reliable, resilient and diverse electric grid, and natural gas has earned its place as the fuel of choice. The resilience of North

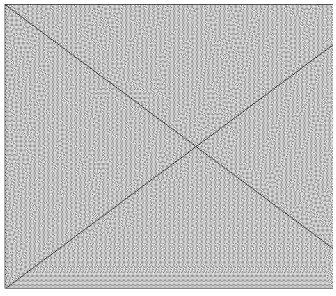
America's power system is an important priority. More than two decades of experience demonstrate that allowing markets to determine the fuel mix of the U.S. generation portfolio is the best way to ensure efficient, responsive, affordable and cleaner energy.

Sincerely,

Jack N. Gerard
President & CEO
API

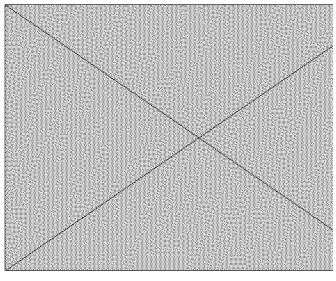
Keystone XL Clears Final Regulatory Hurdle

The Nebraska Public Service Commission's approval of the Keystone XL pipeline is a significant milestone for a project that would enhance crude oil delivery from Canada to U.S. refineries on the Gulf Coast while also increasing U.S. energy security. Learn more about the economic and energy security benefits of building Keystone XL and other energy infrastructure.



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To stay up-to-date on the latest energy-related news, there is no better place to check than the Energy Tomorrow Blog.



About API:

API is the only national trade association representing all facets of the oil and natural gas industry, which supports 10.3 million U.S. jobs and nearly 8 percent of the U.S. economy. API's more than 625 members include large integrated companies, as well as exploration and production, refining, marketing, pipeline, and marine businesses, and service and supply firms. They provide most of the nation's energy and are backed by a growing grassroots movement of more than 40 million Americans.

To learn more about API and the value of oil and natural gas, please visit API.org.

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Jack Gerard, API
1220 L Street, NW
Washington, DC 20005
US

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Heather Bodenhamer
Sent: Tue 9/26/2017 5:23:36 PM
Subject: Data Analytics @ EPA

Hi Samantha,

I was going through our system and came across your information. It seems we may have reached out to you some time ago and at that time, you weren't working on any relevant projects at EPA but I wanted to see if anything has changed. If so, could we possibly reconnect?

I'd like to learn more about your current projects and initiatives regarding data management, analytics, cybersecurity, and machine learning.

What does your schedule look like in the upcoming weeks?

Best,
Heather

Heather Bodenhamer
Federal Development
D (703) 991-7757 **M** (202) 215-0009 |
l. linkedin.com/in/hbod23
Learn about Hadoop | Read our Blog | Download Cloudera

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Mon 12/4/2017 1:50:51 PM
Subject: Mastering Microsoft Word for Legal Professionals

[illegible] | [illegible] | [illegible]

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Mastering Microsoft Word for Legal Professionals

December
14
3 pm - 4:15 pm ET

Presenter: Chelsey Lambert, of North State Consulting LLC

Credits: CLE in all states (Credit Details)

Can't attend live? By registering, you will be able to view the course live, view a recording at any time after the live presentation, or both.

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Rainer Bass
Sent: Tue 10/31/2017 4:45:30 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Rainer Bass
41 Fireside Dr
Rockwall, TX 75032

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Lyle HGoffman
Sent: Tue 10/31/2017 4:43:13 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Lyle HGoffman
1070 w 500 s
woods cross, UT 84087

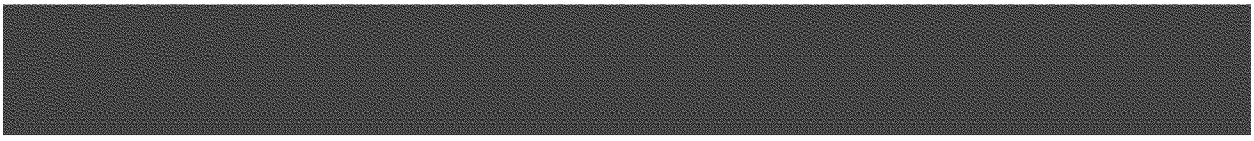
To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Matt Keene
Sent: Wed 11/15/2017 4:01:22 PM
Subject: Sick today

Hi Samantha,
I've got a bit of a sinus infection and out sick today. Sorry for being late in sending this, took me a bit to figure out who to send it to and the email address.

Cheers,
Matt

www.linkedin.com/in/mattkeene

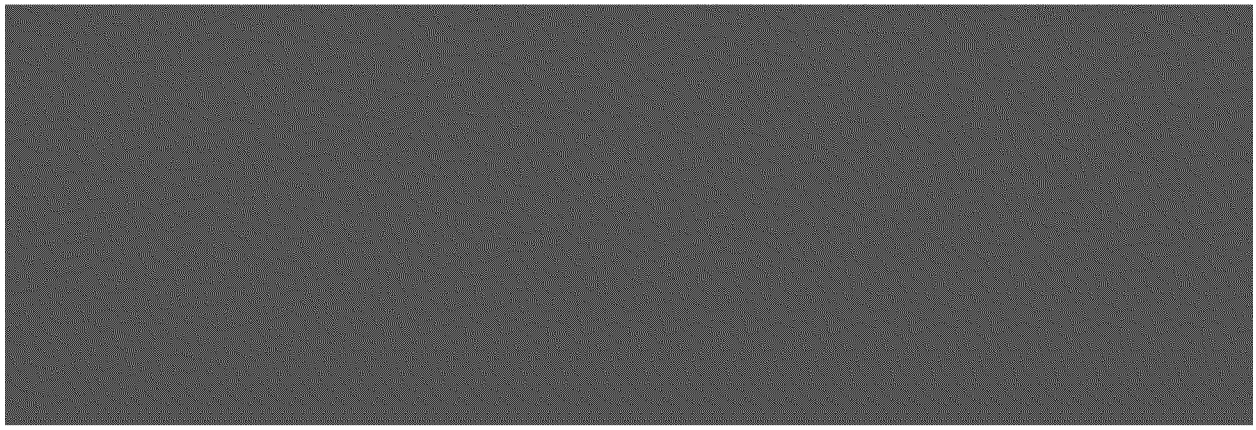
To: Dravis, Samantha[dravis.samantha@epa.gov]
From: ECOS
Sent: Fri 11/17/2017 8:41:39 PM
Subject: Dunn Appointed to Lead U.S. EPA R1, Members Speak around the World, ECOS Issues Innovations Green Report, & More

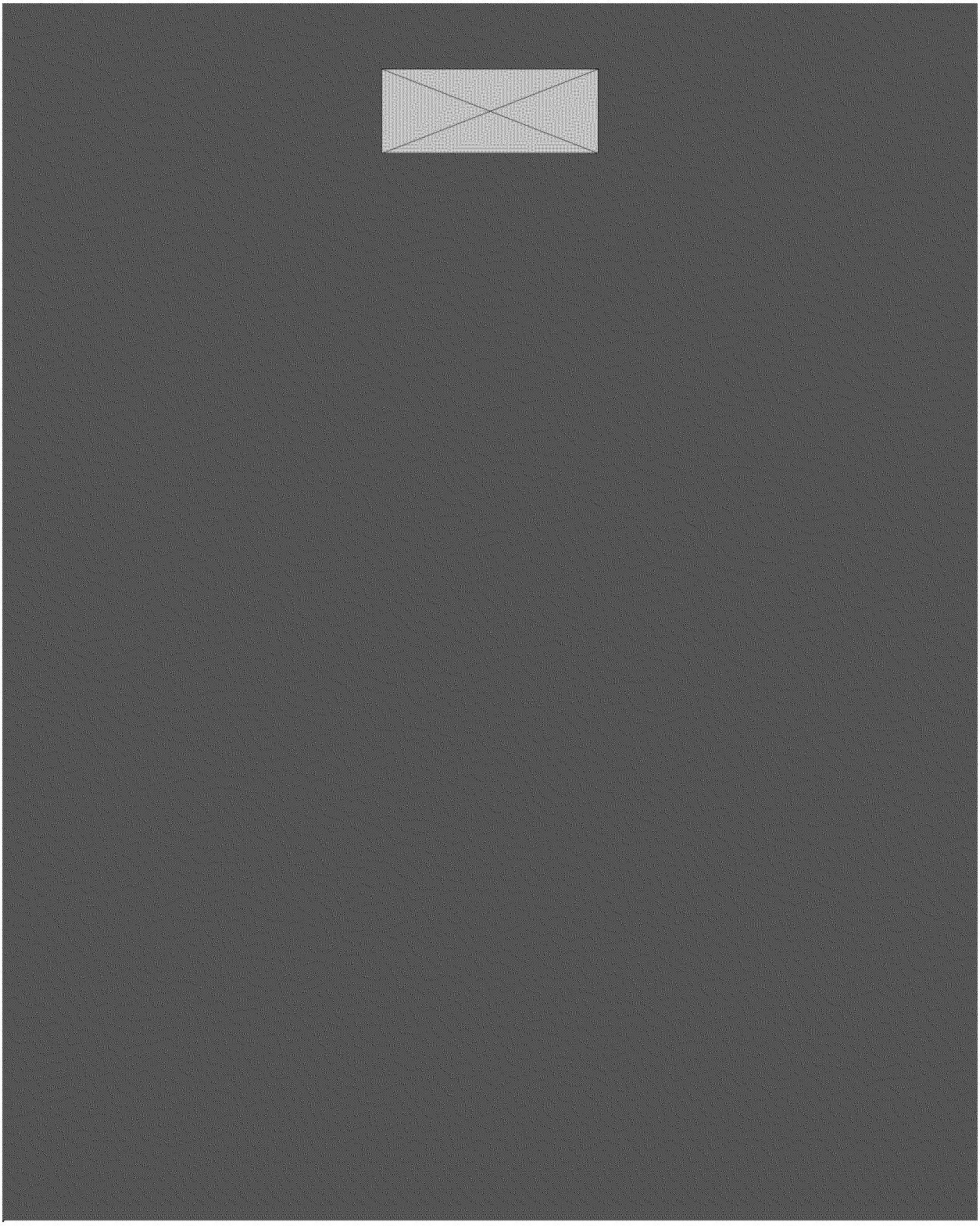






1. 2. 3.





From: Allen, Tania
Location: WJC East 1153 (HQ) or EPAtv
Importance: Normal
Subject: Veterans Day Commemoration Program
Start Date/Time: Wed 11/8/2017 3:30:00 PM
End Date/Time: Wed 11/8/2017 4:30:00 PM
Allen EPA Bio 2017-Final.docx
veterans_day2017-18x46-Final.pdf

Please join us on **November 8th from 10:30 am -11:30 am (EST)** for the EPA 2017 Veterans Day Commemoration Program. We will hear from EPA's own Colonel (Retired) Reginald Allen, Director of Administrative and Executive Services in the Office of the Administrator. He was the first African-American commander of a United States Cavalry regiment in the history of the United States Army, the second African-American to command a squadron of the historic Buffalo Soldiers and led the Armored combat force in the operation that captured Saddam Hussein.

We are also seeking **your pictures** to be included in the PowerPoint slideshow! Please send your military picture to eng.connie@epa.gov by **October 31st** to be included in the presentation.

We are looking forward to this program and hope that you will be able to join us in person or through EPAtv. Please remember that EPAtv is available at http://epatv.epa.gov using only Internet Explorer while on the EPA network and cannot be accessed remotely. Phone lines are not available for this event, but the video recording will also be available for employees who are unable to participate live. People needing reasonable accommodations should contact Kristin P. Tropp at (202)559-0006.

For any additional questions pertaining to the Veterans Employment Program please contact Dr. Lester Facey, facey.lester@epa.gov, 202-566-1321.

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Jeff Clark
Sent: Tue 10/31/2017 4:38:23 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Jeff Clark
1315 W Quail Crossing Ct
Andover, KS 67002

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Wed 11/29/2017 1:48:51 PM
Subject: Persuasive Appellate Brief Writing

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Persuasive Appellate Brief Writing

December
11
3 pm - 4:15 pm ET

Presenter: Rachel Lerman, partner at Barnes & Thornburg LLP

Credits: CLE in all states (Credit Details)

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From: Strobel, Kristin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: To be rescheduled: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/4/2017 5:30:00 PM
End Date/Time: Wed 10/4/2017 6:00:00 PM

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Sun 10/8/2017 11:25:48 PM
Subject: Upcoming Webcasts from ALI CLE | October 11 - October 30

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Engagement Letters for Estate Planners: Managing Client Expectations and Ethical Obligations *Cosponsored by the American College of Trust and Estate Counsel (ACTEC)*	October 11
Writing a Business Plan for Your Practice: Keys to Creating a Blueprint for Success	October 12
Long Story Short: Key Practices for Structuring and Writing Persuasive Briefs	October 13
Marijuana in the Workplace: A Look at Current Legal Issues and What's on the Horizon	October 17
If It's Tuesday, This Must Be Omaha: The Ethics of Multi-Jurisdictional Practice	October 19
Drafting LLC Operating Agreements: Address Key Provisions and Overcome Issues	October 23
ERISA Litigation Update	October 24
Managing Others in Legal Practice: Best Habits for Delegating, Supervising, and Motivating	October 26
E-Discovery and Text Messages: The Technical and Legal Side of Preservation and Collection	October 30

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Mon 11/27/2017 12:09:11 PM
Subject: Cyber Monday Sale Starts Now

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Legal Ethics of Email and Social Media (Dec. 14) Learn more

Blockchain: What Is It and Why Do My Clients Care About It? (Dec. 15) Learn more

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From: Microsoft Outlook
Location: WJC North 3513A
Importance: Normal
Subject: Meet-and-Greet with Samantha Dravis (AA for Policy) and team, Alex Dunn (incoming R1 RA), and Doug Gutro (R1 PAD)
Start Date/Time: Thur 12/7/2017 4:30:00 PM
End Date/Time: Thur 12/7/2017 5:00:00 PM

Your meeting was found to be out of date and has been automatically updated.

Updated meeting details:

Meeting Recurrence

Sent by Microsoft Exchange Server

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Melva Tollett
Sent: Tue 10/31/2017 4:31:05 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Melva Tollett
2828 N. Harwood, Ste. 1300
Dallas, TX 75201

To: Dravis, Samantha[dravis.samantha@epa.gov]; Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
From: Daniel Peterson
Sent: Wed 11/29/2017 1:47:12 PM
Subject: Last Chance

Good morning...I'm sorry not to have heard back from you. I do have time today between 11:45 and 1:45 if you might be available to meet. The rest of my day is already booked.
Thanks for your consideration.

Dan

Daniel Peterson

Director: Center for Property Rights | The James Madison Institute

dpeterson@jamesmadison.org | c. 407-758-2491

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or 303 Valley Edge Drive | Clermont, FL 34715

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"Property must be secured or liberty cannot exist." John Adams, 1790

From: Robin Wiener
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: To be rescheduled: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/4/2017 5:30:00 PM
End Date/Time: Wed 10/4/2017 6:00:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Mon 11/27/2017 12:17:51 AM
Subject: Upcoming Webcasts from ALI CLE | November 28 - December 13

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Get Organized and Get Things Done: Practical Time Management for Lawyers	November 29
Rules of Engagement: Ethical Considerations for Engagement Agreements	November 30
Clean Water Act: Law and Regulation	December 4 - 5
Legal Opinions in Real Estate Transactions: What You Need To Know	December 5
Planning for Incapacity: Financial Powers of Attorney, Health Care Directives, and Ethical Challenges	December 6
Contract Drafting Traps for the Unwary: Confidentiality Agreements	December 7
Microsoft Word for Litigators	December 7
Creating and Maintaining a Paperless Practice: Improve Workflow, Increase Efficiency	December 8
Current Developments in Estate and Tax Planning 2017 *Cosponsored by The American College of Trust and Estate Counsel (ACTEC)*	December 13

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Mon 12/4/2017 12:20:07 AM
Subject: Upcoming Webcasts from ALI CLE | December 5 - December 18

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Contract Drafting Traps for the Unwary: Confidentiality Agreements	December 7
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Creating and Maintaining a Paperless Practice: Improve Workflow, Increase Efficiency	December 8
Current Developments in Estate and Tax Planning 2017 *Cosponsored by The American College of Trust and Estate Counsel (ACTEC)*	December 13
Legal Ethics of Email and Social Media	December 14
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To: Myron Ebell[Myron.Ebell@cei.org]
From: Myron Ebell
Sent: Mon 10/16/2017 2:23:19 PM
Subject: Cooler Heads Coalition: Milloy op-ed, Darwall book, PBS, and meeting reminder

Reminder: the Cooler Heads Coalition will meet today, Monday, beginning at 12 noon at CEI, 1310 L Street, N. W., Seventh Floor.

Green Tyranny: Exposing the Totalitarian Roots of the Climate-Industrial Complex by Rupert Darwall has been published by Encounter Books. It may be purchased here and here.

Frontline on PBS last week broadcast an inspiring documentary on the ***War on the EPA***. It may be viewed online here.

And here is Steve Milloy's op-ed in the Wall Street Journal:

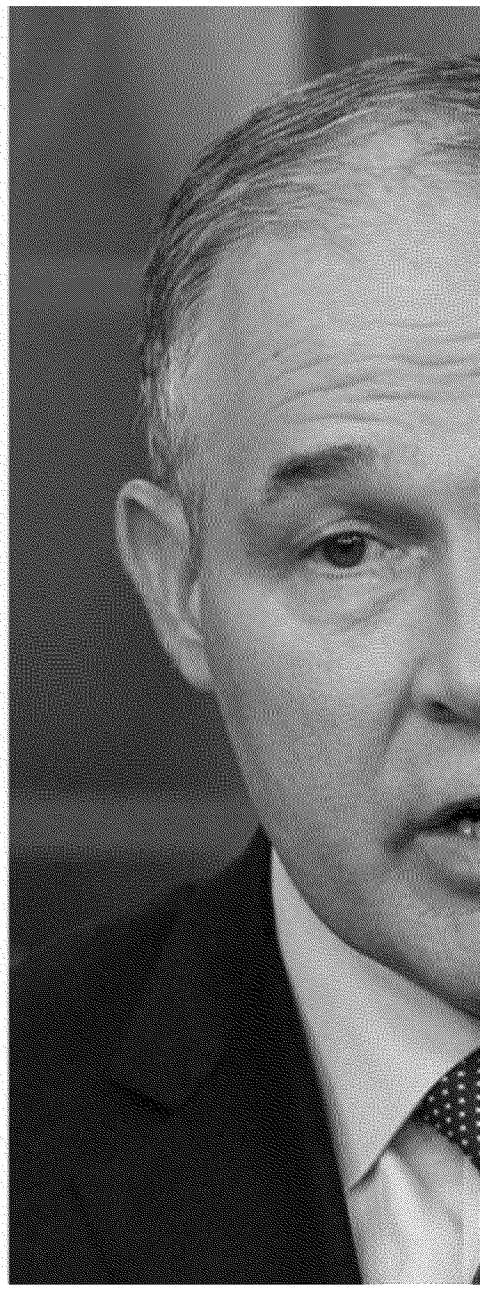
https://www.wsj.com/articles/the-clean-power-plans-counterfeit-benefits-1508104504

- Opinion
- Commentary

The Clean Power Plan's Counterfeit Benefits

The Obama EPA claimed its regulation would have a $55 billion payoff. You'll never believe how.





Former EPA Administrator Gina McCarthy in 2015; current EPA Administrator Scott Pruitt in June. Photo: Christophe Ena/Associated Press;SHAWN THEW/European Pressphoto Agency

By Steve Milloy

Oct. 15, 2017 5:55 p.m. ET

56 COMMENTS

The Environmental Protection Agency's proposed repeal of the Obama administration's Clean Power Plan is a milestone. No Republican administration has ever mustered the courage to roll back a major EPA regulation. In a clever twist, the Trump administration has done so by directly challenging the plan's purported health benefits.

Although the Clean Power Plan was pitched as a way to reduce emissions of greenhouse gases from coal-fired power plants, averting climate change was not how the Obama EPA justified the rule. In 2015 House Science Committee Chairman Lamar Smith forced Obama's EPA administrator, Gina McCarthy, to acknowledge that the plan would produce no change to global temperatures. Instead, the EPA justified the net benefit of the rule based on collateral reductions in power plants' emissions of fine particulate matter. In regulatory parlance, this soot is called PM2.5.

While the compliance costs to industry of the Clean Power Plan could be as high as $33 billion a year, the Obama EPA claimed that the economic benefits from reducing PM2.5 emissions would be even larger—as much as $55 billion a year.

What are the supposed $55 billion in economic benefits? That sum is intended to represent the value of thousands of premature deaths allegedly prevented every year by the Clean Power Plan via the co-benefit of reduced PM2.5 emissions. The EPA values lives "saved" at around $9 million each. Thousands times millions equal billions.

EPA staff invented this calculus in 1996 to justify the agency's first effort to regulate PM2.5, although there's no scientific evidence, then or now, to support the notion that particulates in outdoor air kill people. The EPA regulated them anyway, stiff-arming not only the Republican-controlled Congress's demands for proof of the danger of PM2.5 emissions but the objections of then-Vice President Al Gore, who thought the rule too costly.

The Clean Air Act requires air-quality standards for pollutants such as PM2.5 be set at a "safe" level. The EPA has long claimed that there is no safe level of exposure to PM2.5 and that inhalation can cause death within hours. But the EPA could never lower the PM2.5 standard to zero because such a standard could not be attained even if the economy was entirely shut down.

The Trump EPA has now largely jettisoned the notion that PM2.5 is a killer by slashing the supposed economic benefits of reduced emissions by $29 billion per year. That nets out favorably against the rule's anticipated annual costs of as much as $33 billion.

A robust body of scientific literature—from large epidemiologic studies to clinical research to historical air-quality data—supports the EPA's reversal. Standing against it are a few decades of dubious agency-funded studies, the underlying data for which the agency has kept well hidden in order to prevent independent analyses. The Obama EPA even defied a congressional subpoena in order to keep its PM2.5 epidemiologic secret.

EPA chief Scott Pruitt has hailed repeal of the Clean Power Plan as the end of the Obama administration's "war on coal." It's more like the beginning of the end. New York's Democratic Attorney General Eric Schneiderman and green groups have already announced they will sue. Good luck. When the Supreme Court voted to stay the Clean Power Plan in February 2016, it was a clear signal that the coal industry and red-state plaintiffs would prevail on the merits in any future legal challenge. The EPA's acknowledgment that the Clean Power Plan has no economic or climate benefits is the final nail in the regulation's coffin.

Mr. Milloy served on the Trump EPA transition team and is the author of "Scare Pollution: Why and How to Fix the EPA" (Bench Press 2016).

Myron Ebell

Director, Center for Energy and Environment

Competitive Enterprise Institute

1310 L Street, N. W., Seventh Floor

Washington, DC 20005, USA

Tel direct: (202) 331-2256

Tel mobile: (202) 320-6685

E-mail: Myron.Ebell@cei.org

Stop continental drift!

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Randie Jones
Sent: Tue 10/31/2017 4:28:01 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Randie Jones
1070 W 500 S
West Bountiful, UT 84087

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Wed 11/29/2017 12:25:15 PM
Subject: Legal Ethics of Email and Social Media – Don't Miss It, 12/15

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Provides 2 hours of ethics instruction

Legal Ethics of Email and Social Media

Friday, December 15, 2017 | 1:00 - 3:00 p.m. Eastern

Video Webcast

Recorded July 18, 2017

The internet – particularly email and social media – can be a "virtual" minefield for ethical violations surrounding your duty of confidentiality, inadvertent waiver of the attorney-client privilege, and so much more. How can you be sure that you don't violate the rules of professional conduct?

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Faculty

Thomas E. Spahn, McGuireWoods LLP, Tysons, Virginia

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: National Geographic
Sent: Wed 10/11/2017 3:19:54 PM
Subject: You're Invited: Ocean Conservation Event

October 18: National Geographic Forum on Ocean Conservation

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Please join National Geographic Society President and CEO **Gary E. Knell** for a conversation around the critical global issue of ocean conservation. The forum will feature **Dr.** —National Geographic Society Explorer-in-Residence and leader of the Pristine Seas project—and Co-Chair of the bipartisan Senate Oceans Caucus **Senator Sheldon Whitehouse** of Rhode Island.

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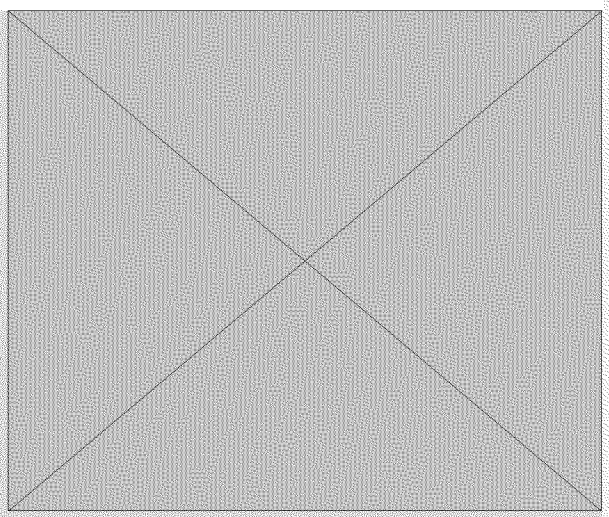


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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Virtual Intelligence Briefing
Sent: Sat 10/7/2017 8:03:04 PM
Subject: $500 Reasons to Stop Ransomware [Live Demo}

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[redacted]

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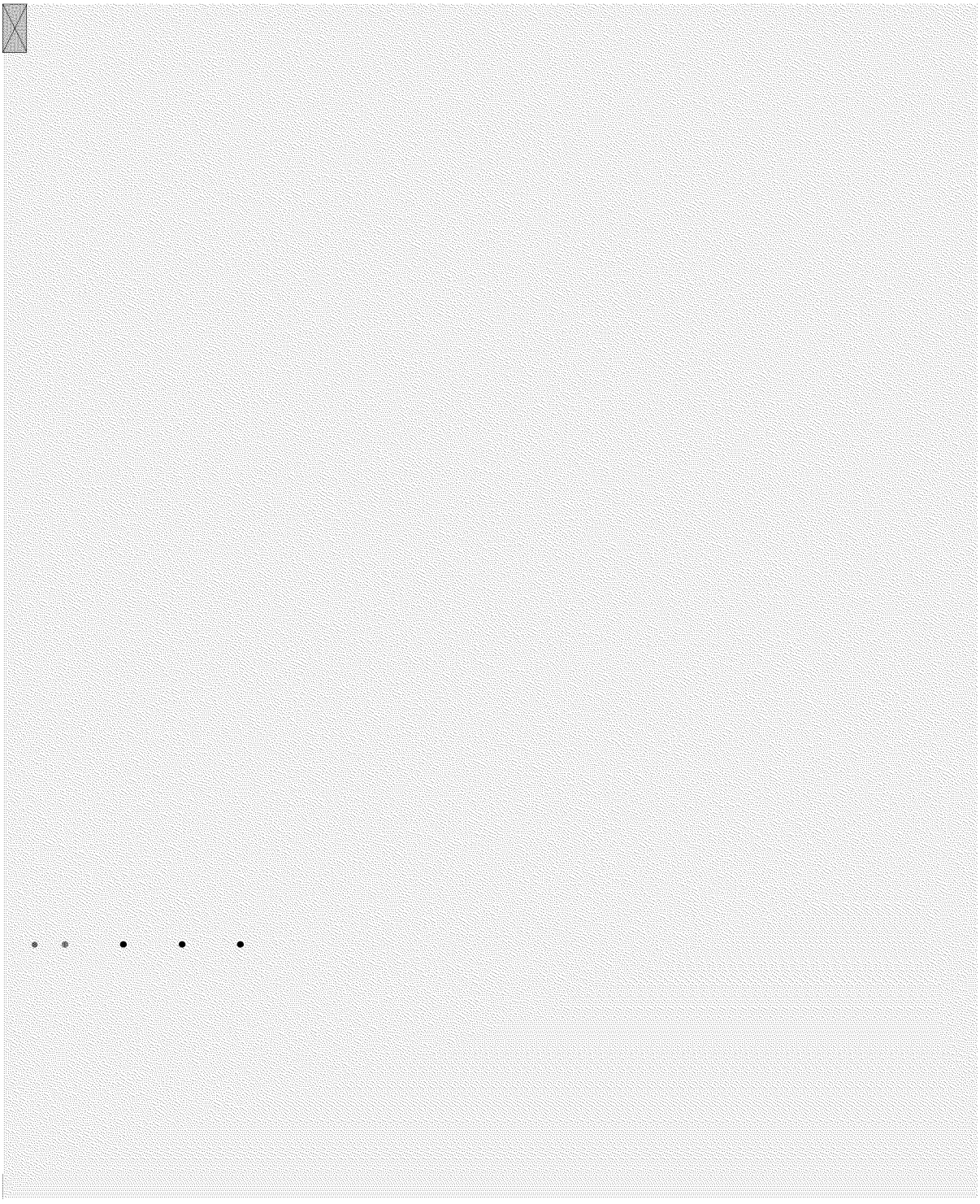
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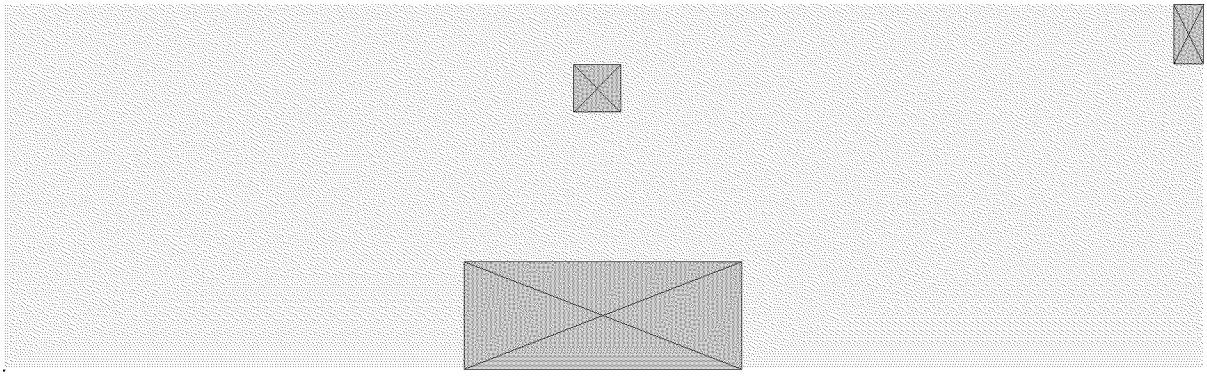
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Milford, New Hampshire 03055
US

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: ECOS
Sent: Mon 9/25/2017 3:23:51 PM
Subject: Limited Seats Remain, EPA Confirmed for ECOS Webinar on Cooperative Federalism 2.0: A Deeper Look into a Rebooted EPA-State Relationship

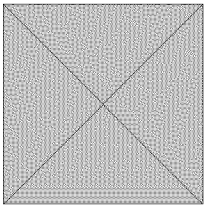


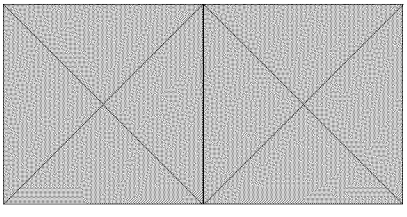


From: Brian Shine
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Declined: FW: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/25/2017 1:30:00 PM
End Date/Time: Wed 10/25/2017 2:00:00 PM

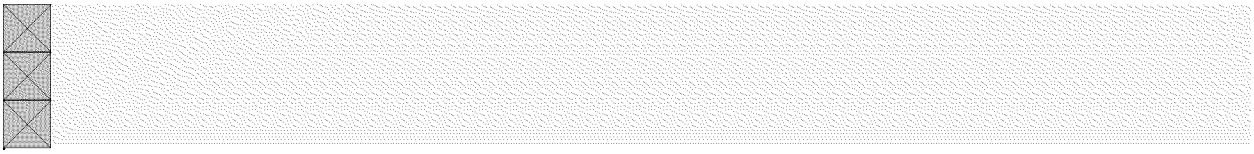
;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: InsideSources
Sent: Sun 12/3/2017 11:18:52 PM
Subject: Welcome!









To: Dravis, Samantha[dravis.samantha@epa.gov]
From: John Thurman
Sent: Tue 10/31/2017 4:27:14 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

John Thurman
1109 Mahone
Artesia, NM 88210

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Research Analytics
Sent: Wed 10/11/2017 3:19:51 PM
Subject: [SPAM] Special Invitation

Dear Samantha,

We at RainKing are conducting an exclusive survey of select IT professionals to identify **supply chain and operations management** trends. This survey will be active for 72 hours; on average it will take no more than **3-5 minutes** to complete.

To thank you for your feedback, RainKing is offering all participants that complete the survey a **$15 dollar Amazon gift card** or the opportunity to **donate $15 dollars to a charity of your choice**. A copy of the **aggregate results** will also be sent shortly.

Follow this link to the Survey:
Take the Survey

Or copy and paste the URL below into your internet browser:
https://rainking.qualtrics.com/jfe/form/SV_cwpJ9jRsUHao0gR?Q_DL=3pBvctMW9CUYHMF_cwpJ9jRsUHac

Best regards,

RainKing Research

analytics@rainkingonline.com

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From: Strobel, Kristin
Location: 3500 WJCN
Importance: Normal
Subject: Accepted: Meeting with Samsung: TV Energy Star Standards
Start Date/Time: Wed 10/25/2017 5:30:00 PM
End Date/Time: Wed 10/25/2017 6:00:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Teri Amaya
Sent: Tue 10/31/2017 4:24:29 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Teri Amaya
2210 Hartley Drive
Forney, TX 75126

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Fri 11/17/2017 3:08:06 PM
Subject: Law Firm Cyber Security and Legal Malpractice Risks

[illegible] | [illegible] | [illegible]

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Law Firm Cyber Security and Legal Malpractice Risks

November
20
3 pm - 4:15 pm ET

Presenter: Margaret Reetz, partner at Mendes & Mount LLP

Credits: CLE in all states (Credit Details)

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Please call us at 703-372-0550

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This email was sent to dravis.samantha@epa.gov. If you are receiving it in error, please reply to this email.

From: Brian Shine
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Declined: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/25/2017 7:00:00 PM
End Date/Time: Wed 10/25/2017 7:30:00 PM

To: Myron Ebell[Myron.Ebell@cei.org]
From: Myron Ebell
Sent: Mon 10/30/2017 2:34:37 PM
Subject: Cooler Heads Coalition invitation to Carbon Tax Follies, Thursday, 2nd November, 2:30 PM, 2322 Rayburn

I hope you can join us for this timely discussion.

Competitive Enterprise Institute
Institute for Energy Research

and

The Cooler Heads Coalition

invite you to

Carbon Tax Follies

with opening remarks by

Representative Bill Flores (R-Texas)

and a panel discussion with

Marlo Lewis, Ph. D.

Senior Fellow, Competitive Enterprise Institute

James Lucier

Managing Director, Capital Alpha

Robert Murphy, Ph. D.

Senior Economist, Institute for Energy Research

2:30 – 3:30 PM

Thursday, November 2, 2017

Room 2322, Rayburn House Office Building

(refreshments provided)

Promoters of taxes on carbon dioxide emissions are trying to attract support from conservatives by claiming that such taxes are a free market response to global warming. Promoters claim that CO2 taxes can be revenue neutral, can be a huge new source of additional government revenues, and that the revenues can be returned as a dividend to consumers. It is also claimed that taxing emissions is a cost-effective way to lower those emissions, will create more jobs than are lost, and will even provide a boost to the economy.

After opening remarks by Rep. Bill Flores, three experts will

debunk these claims and discuss the real economic and political effects of CO2 taxes. Jim Lucier will also discuss a just-published economic analysis of recent carbon tax proposals. There will be time for Q&A with the panelists.

RSVP Here

For purposes of congressional ethics rules, this is a widely attended event.

Questions? Please contact Taylor Barkley at taylor.barkley@cei.org

Myron Ebell

Director, Center for Energy and Environment

Competitive Enterprise Institute

1310 L Street, N. W., Seventh Floor

Washington, DC 20005, USA

Tel direct: (202) 331-2256

Tel mobile: (202) 320-6685

E-mail: Myron.Ebell@cei.org

Stop continental drift!

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Phillip Anastasion
Sent: Tue 10/31/2017 4:21:57 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Phillip Anastasion
234 North 1000 West
West Bountiful, UT 84087

To: Dravis, Samantha[dravis.samantha@epa.gov]; Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
From: Messner, Kevin
Sent: Wed 11/29/2017 4:51:54 AM
Subject: INCYMI: Bloomberg Charge Size Story

Trump's EPA Backs a Climate Change Tweak Environmentalists Like

By

Eric Roston

November 28, 2017, 10:14 AM PST

- Obscure rule covering cooling gases is part of a global trend
- U.S. manufacturers urge Trump to adopt accord on chemicals

The Trump administration took a small step toward addressing climate change last week -- it just didn't put it quite in those words.

Without fanfare -- or even a public announcement -- the Environmental Protection Agency issued an arcane rule that allows refrigerator and air-conditioner manufacturers to increase the amount of three cooling chemicals they can use safely. In a twist, the change was welcomed by manufacturers that want to adapt and use chemicals that would cause less global warming.

While business groups and environmentalists split over the Clean Power Plan, the Obama administration's landmark attempt to address climate change, when it comes to replacing hydrofluorocarbons, or HFCs, both U.S. manufacturers and environmental groups are pushing for new rules to reduce their use.

"It's a technical change, and it's not controversial," said Kevin Messner, senior vice president for policy and government relations at the Association of Home Appliance Manufacturers. "It's great to see something like this, as an example of how it can be done right."

Carbon dioxide from fossil-fuel burning gets all the attention in climate change, and it's the main driver of global warming. HFCs make up a small fraction of the

total, but their “global warming potential” -- a measure of how much heat a gas can trap -- makes them thousands of times more powerful than CO2.

Because of their potency, under President Barack Obama the U.S. signed on to a global accord to phase them out.

United Nations diplomats met last week to discuss that accord. The Kigali Amendment was signed in October 2016, and went into effect when the 20th nation, Sweden, ratified the treaty, which would reduce potential global warming by 0.5 degree Celsius by 2100.

While President Donald Trump has not submitted the treaty to the Senate for ratification, the State Department announced that the U.S. supports the pact on HFCs. The agreement is "pragmatic and balanced," said Judith Garber, of the State Department’s oceans, environment, and scientific bureau. She said the administration is working toward submitting the treaty to the Senate for ratification.

By declaring hydrocarbon successor chemicals as safe replacements to HFCs, the new EPA rule will help push appliances in the same direction as the Kigali accord.

Phaseout Plans

Home refrigerator makers in particular now have the EPA’s authorization to phase out the use of HFCs, replacing them with a hydrocarbon called isobutane. Having the rule in hand frees manufacturers to go ahead with their phaseout plans without needing the Kigali Amendment ratified in the Senate, according to Messner.

The EPA rule raises what the agency considers the safe levels of hydrocarbon coolants. The rule is confined to refrigerators and air conditioners, because car AC systems might release inflammable chemicals during an accident.

"There are accidents," said David Doniger, director of the Natural Resources Defense Council’s Climate and Clean Air Program. But "your home refrigerator is not going to run into another refrigerator at 30 miles per hour."

In August, a federal appeals court struck down separate Obama-era regulations governing HFCs. The Chemours Co., Honeywell International Inc., and the NRDC have filed a request for a rehearing and are awaiting a decision.

Kevin Messner

Senior Vice President, Policy & Government Relations

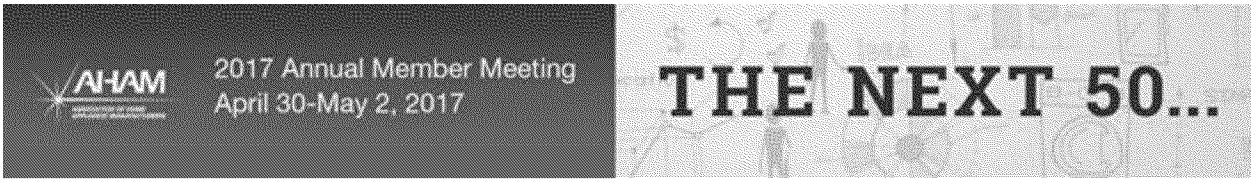
Association of Home Appliance Manufacturers

1512 Willow Lane, Davis, CA 95616

1111 19th Street NW, Suite 402, Washington, DC 20036

t 202.872.5955 ext. 353 *m* 530.309.5629 *f* 202.872.9354 *e* kmessner@aham.org

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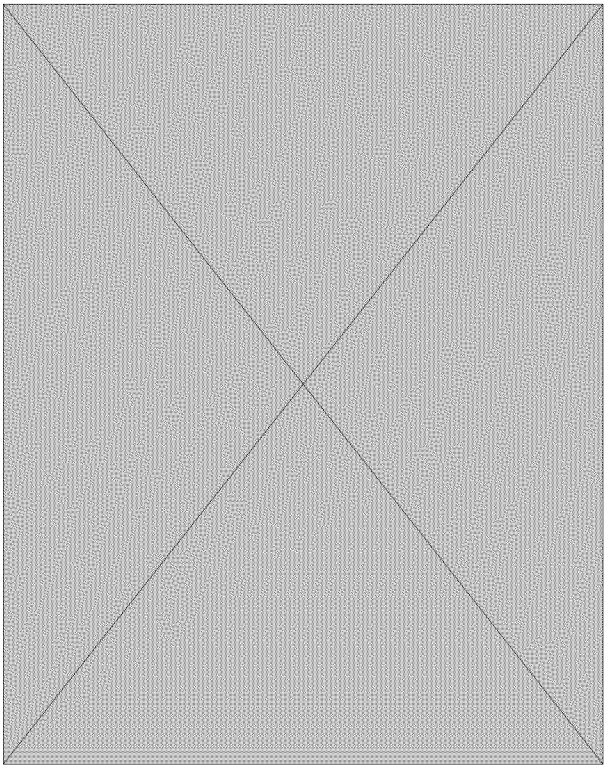


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From: Lacey, Pam
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: AGA and NGVA Regulatory Reform Discussion Focusing on the Subpart W Reporting Rule and the PCB Rules
Start Date/Time: Mon 10/30/2017 6:30:00 PM
End Date/Time: Mon 10/30/2017 7:00:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: ExxonMobil
Sent: Mon 9/25/2017 1:38:50 PM
Subject: ExxonMobil Expands Methane Emissions Reduction Program





From: Robin Wiener
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/25/2017 7:00:00 PM
End Date/Time: Wed 10/25/2017 7:30:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Mon 10/30/2017 1:08:48 PM
Subject: Ethically Ending the Attorney-Client Relationship

If you are having trouble reading this email, read the online version.

Breaking Up Is Hard to Do: Ethically Terminating the Attorney-Client Relationship

Provides 1 hour of ethics instruction

Thursday, November 16, 2017 | 12:00 – 1:30 p.m. Eastern

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Mark Cunningham
Sent: Tue 10/31/2017 4:12:56 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Mark Cunningham
4342 Boca Bay Drive
Dallas, TX 75244

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Arthur Sutherland
Sent: Wed 10/11/2017 11:44:44 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Arthur Sutherland
5330 Chichester Avenue
Aston, PA 19014

From: Billy Johnson
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/25/2017 7:00:00 PM
End Date/Time: Wed 10/25/2017 7:30:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Chester Henson
Sent: Tue 10/31/2017 4:12:34 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Chester Henson
po box 2986
Moriarty, NM 87035

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Denis Newpher
Sent: Wed 10/11/2017 11:26:05 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Denis Newpher
123 Mexico Rd
Oley, PA 19547

To: Tracy Mehan[tmehan@awwa.org]
From: Tracy Mehan
Sent: Wed 10/18/2017 6:38:48 PM
Subject: AWWA on Farm Bill Reauthorization

https://www.awwa.org/resources-tools/public-affairs/press-room/press-release/articleid/4803/awwa-calls-for-farm-bill-measures-that-protect-drinking-water-sources-encourage-partnerships.aspx

https://www.agri-pulse.com/articles/10022-opinion-farm-bill-provides-an-opportunity-to-grow-partnerships-that-protect-drinking-water

Dear Colleague,

Above please find two links relative to the American Water Works Association's (AWWA's) work on the upcoming Farm Bill Reauthorization. The first is AWWA's press release issued last week. The second is an op-ed by AWWA CEO David LaFrance which appeared in Agri-Pulse, the leading on-line agricultural publication.

Thank you for your interest. Let me know if you have any questions.

Tracy

G. Tracy Mehan, III

Executive Director, Government Affairs

American Water Works Association

202-326-6125 (direct)

703-850-9401 (cell)

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Kenneth Norwood
Sent: Tue 11/14/2017 11:38:40 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Kenneth Norwood
4657 Lucient Circle
Plano, TX 75024

From: Strobel, Kristin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/25/2017 7:00:00 PM
End Date/Time: Wed 10/25/2017 7:30:00 PM

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Francine Guerrero
Sent: Tue 10/31/2017 4:10:46 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Francine Guerrero
1112 W Centre Ave
Artesia, NM 88210

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Tue 11/28/2017 7:02:18 PM
Subject: Managing Ethical Risks in Engagement Agreements

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Provides one hour of ethics instruction

Rules of Engagement:
Ethical Considerations for Engagement Agreements

Telephone Seminar | **Audio Webcast**

Thursday, November 30, 2017 | 12:00 - 1:00 p.m. Eastern

Recorded May 24, 2017

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Pamela A. Bresnahan, Vorys, Sater, Seymour and Pease LLP

Lucian T. Pera, Adams & Reese LLP

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Significant discounts are available when two or more registrants in the same physical location view or listen to an ALI CLE webcast or telephone seminar using one computer connection or telephone. **Save up to 50%!**

Questions?

Please don't hesitate to email us any questions you may have at **custserv@ali-cle.org**.

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From: Cunningham, Allison
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: AGA and NGVA Regulatory Reform Discussion Focusing on the Subpart W Reporting Rule and the PCB Rules
Start Date/Time: Mon 10/30/2017 6:30:00 PM
End Date/Time: Mon 10/30/2017 7:00:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Zeeshan Farooqui
Sent: Tue 10/31/2017 4:10:24 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Zeeshan Farooqui
2828 North Harwood street
Dallas, TX 75201

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Tobin, Clear Law Institute
Sent: Tue 11/28/2017 5:34:44 PM
Subject: Tomorrow: Using Technology to Avoid Ethical Violations & Avoiding Ethical Violations When Using Technology

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Using Technology to Avoid Ethical Violations & Avoiding Ethical Violations When Using Technology

November
29
3 pm - 4:15 pm ET

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Credits: CLE in all states (Credit Details)

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Our Mailing Address:
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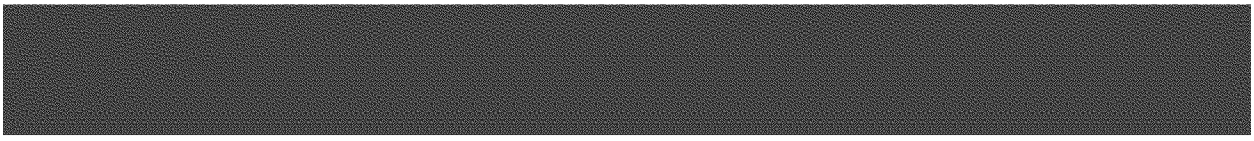
From: Clarke, Jeff
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: AGA and NGVA Regulatory Reform Discussion Focusing on the Subpart W Reporting Rule and the PCB Rules
Start Date/Time: Mon 10/30/2017 6:30:00 PM
End Date/Time: Mon 10/30/2017 7:00:00 PM

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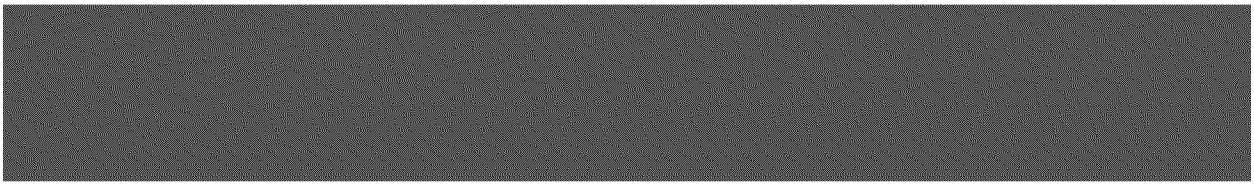
From: John Godfrey
Location: 3500 WJCN
Importance: Normal
Subject: Accepted: FW: Meeting with Samsung: TV Energy Star Standards
Start Date/Time: Thur 10/5/2017 6:00:00 PM
End Date/Time: Thur 10/5/2017 6:30:00 PM

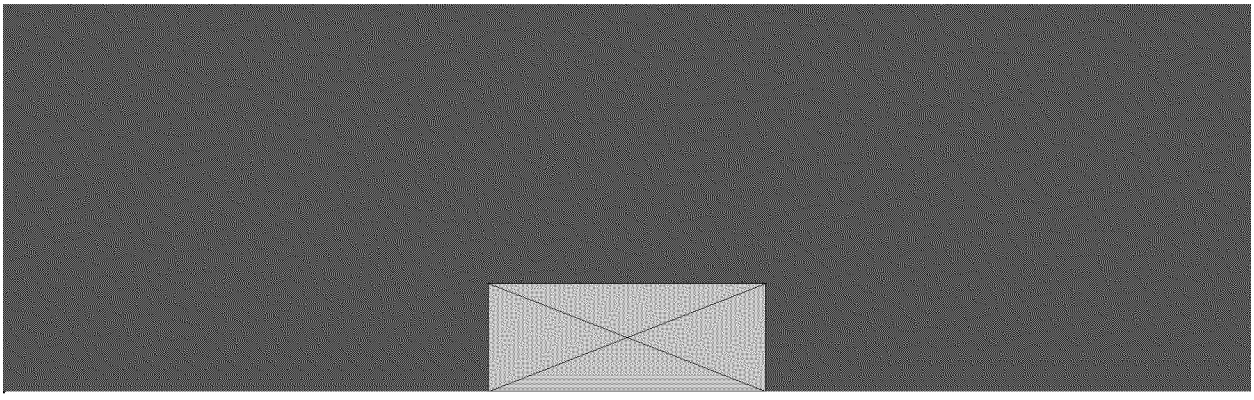
;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: ECOS
Sent: Fri 12/1/2017 8:48:55 PM
Subject: ECOS Launches Executive Director Search, Brownfields and Budget Bills Advance in Congress, & More



1. 2. 3. 4. 5.





To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Heather Bodenhamer
Sent: Thur 9/28/2017 5:23:57 PM
Subject: Re: Data Analytics @ EPA

Hi Samantha,

If you are not the best person to speak to at EPA regarding big data and advanced analytics, could you please let me know who that is so I can update my records?

Thank you,
Heather

Heather Bodenhamer
Federal Development
D (703) 991-7757 **M** (202) 215-0009 |
l. linkedin.com/in/hbod23
Learn about Hadoop | Read our Blog | Download Cloudera

On Tue, Sep 26, 2017 at 10:23 am, Heather Bodenhamer wrote:
Hi Samantha,

I was going through our system and came across your information. It seems we may have reached out to you some time ago and at that time, you weren't working on any relevant projects at EPA but I wanted to see if anything has changed. If so, could we possibly reconnect?

I'd like to learn more about your current projects and initiatives regarding data management, analytics, cybersecurity, and machine learning.

What does your schedule look like in the upcoming weeks?

Best,
Heather

Heather Bodenhamer
Federal Development
D (703) 991-7757 **M** (202) 215-0009 |
l. linkedin.com/in/hbod23
Learn about Hadoop | Read our Blog | Download Cloudera

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Philip Nelson
Sent: Tue 10/31/2017 4:09:30 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Philip Nelson
1254 Cabin Cove
Idaho Falls, ID 83404

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Daniel Peterson
Sent: Tue 11/28/2017 4:27:41 PM
Subject: Re: My DC Visit Tuesday and Wednesday

Hey Samantha! Hope all is well. I board at 12:30. Any availability anytime today after 3:30? Dan

Sent from my iPhone

On Nov 27, 2017, at 2:36 PM, Dravis, Samantha <dravis.samantha@epa.gov> wrote:

> Hi Daniel. Thank you for reaching out! Let me check in with my assistant and see what my schedule looks like. Best, Samantha
>
> Sent from my iPad
>
> On Nov 27, 2017, at 2:04 PM, Daniel Peterson <dpeterson@jamesmadison.org> wrote:
>
> > Greetings from Florida, Samantha. We met during an SPN fly-in a couple of months ago.
> > I am attending a Energy-Climate Change Summit at the Heritage Foundation on Thursday. But, I will be in DC tomorrow afternoon and Wednesday.
> >
> > I 'd like to meet with you briefly to get your counsel on a policy paper I am writing of the :Economic Impact of Sustainability.
> >
> > Would it be possible to meet for 10-15 minutes either tomorrow afternoon after 3:30 or on Tuesday before 10:30. I could also meet on Tuesday over the lunch hour if that works better.
> >
> > Thanks for your consideration. Hope to see you soon.
> >
> > Dan
> >
> >
> > ## *Daniel Peterson*
> >
> > ***Director: Center for Property Rights | The James Madison Institute***
> >
> > **dpeterson@jamesmadison.org | c. 407-758-2491**
> >
> > *The Columns | 100 N. Duval St. | Tallahassee, FL 32301*
> >
> > *or 303 Valley Edge Drive | Clermont, FL 34715*
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"Property must be secured or liberty cannot exist." John Adams, 1790

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Sun 10/29/2017 11:21:55 PM
Subject: Upcoming Webcasts from ALI CLE | October 31 - November 9

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UPCOMING WEBCASTS

Take a look at ALI CLE's upcoming audio and video webcasts. From latest developments to ethics to skills courses, we have a variety of programs to choose from. Find the one that best fits your needs!

Paying Partners: Best Practices for Allocating Compensation	October 31
Attorney-Client Privilege: Key Aspects All Lawyers Should Know	November 1
Life Insurance Company Products: Featuring Current SEC, FINRA, Insurance, Tax, and ERISA Regulatoryand Compliance Issues	November 1-3
Advanced Estate Planning Practice Update: Fall 2017	November 2
Estate Planning for the Family Business Owner	November 2-3
Construction Contracts: Issues and Drafting Tips	November 6
Current Developments in Employment Law: Recurring Discovery and Evidence Issues in Employment Cases	November 6
Drafting for the New Partnership Audit Rules in Operating Agreements	November 7
Cloud Computing Fundamentals for Lawyers	November 8
International Trust and Estate Planning 2017	November 9-10

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Unsubscribe or Update Your Email Preferences

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: John Cochlin
Sent: Tue 10/31/2017 4:01:29 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

John Cochlin
2414 W 119th St. S.
Jenks, OK 74037

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Raymond Yarnall
Sent: Tue 10/10/2017 9:12:59 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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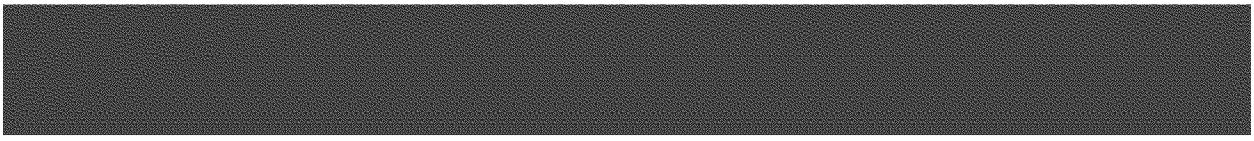
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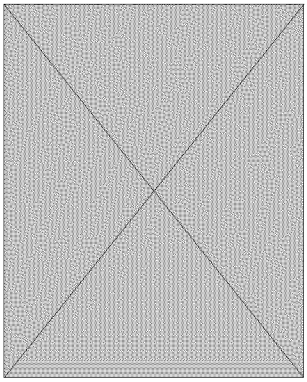
Thank you.

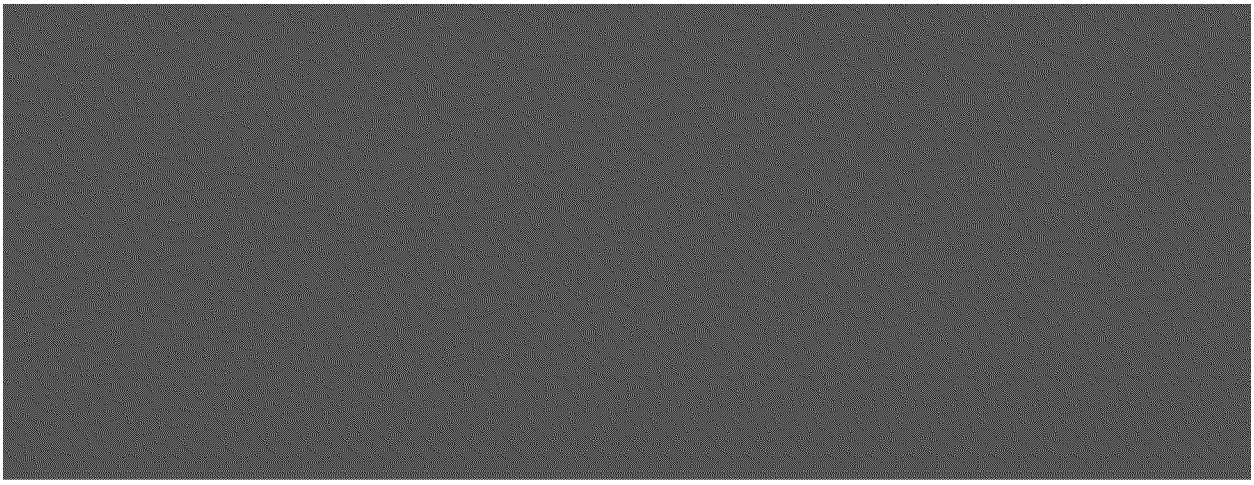
Raymond Yarnall
1516 Winding Brook Run
Garnet Valley, PA 19060

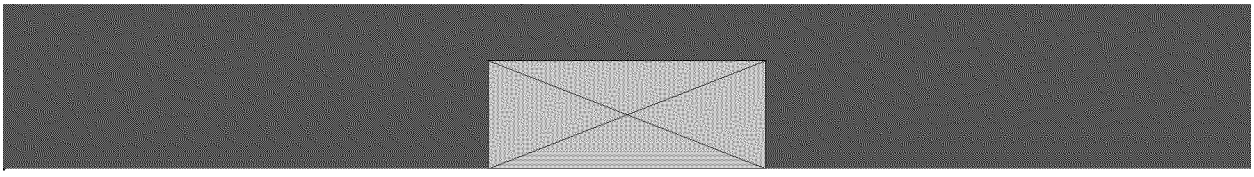
To: Dravis, Samantha[dravis.samantha@epa.gov]
From: ECOS
Sent: Fri 10/6/2017 6:18:28 PM
Subject: ECOS Represents States at White House Forum, U.S. EPA Releases Draft Strategic Plan, & More











To: Dravis, Samantha[dravis.samantha@epa.gov]
From: ECOS
Sent: Fri 10/27/2017 7:31:35 PM
Subject: ECOS Results Goes Live, Members Speak Around the Country, & More

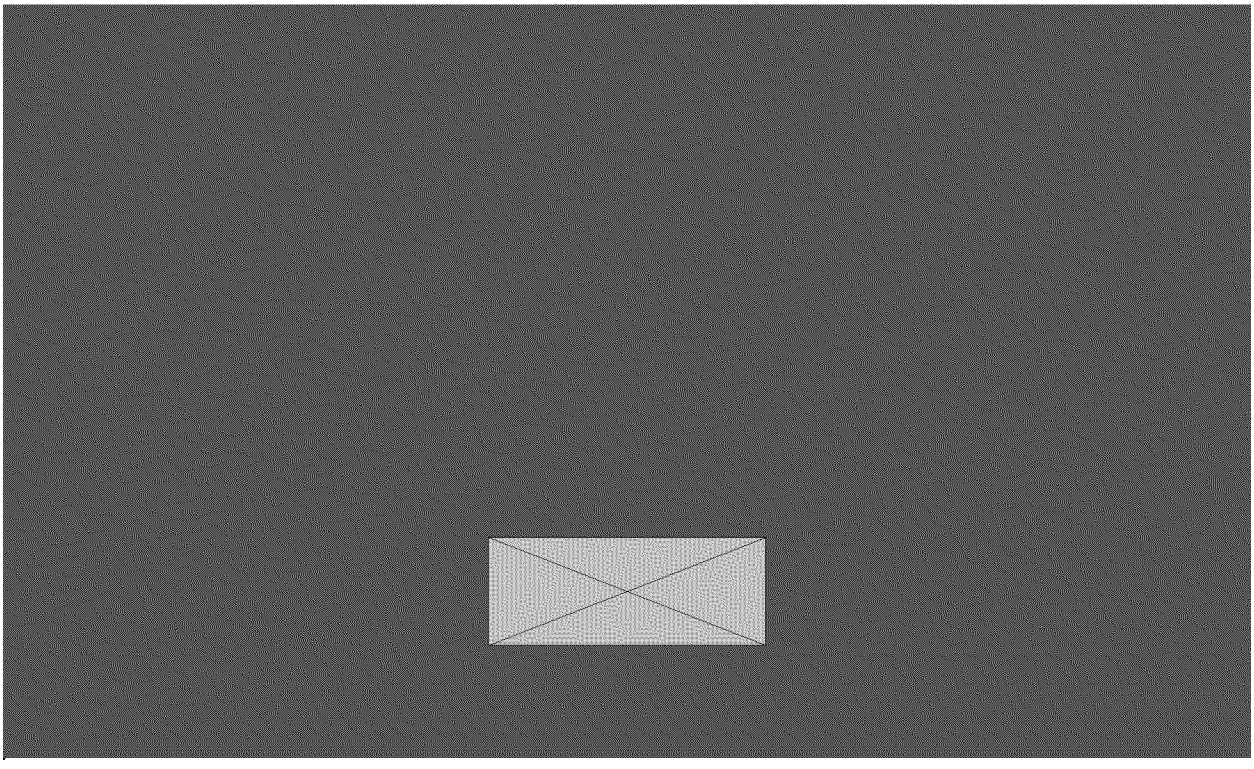
[redacted]

[redacted]

[redacted]

[redacted]





To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Matthew Cimino
Sent: Tue 10/31/2017 3:57:34 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

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Thank you.

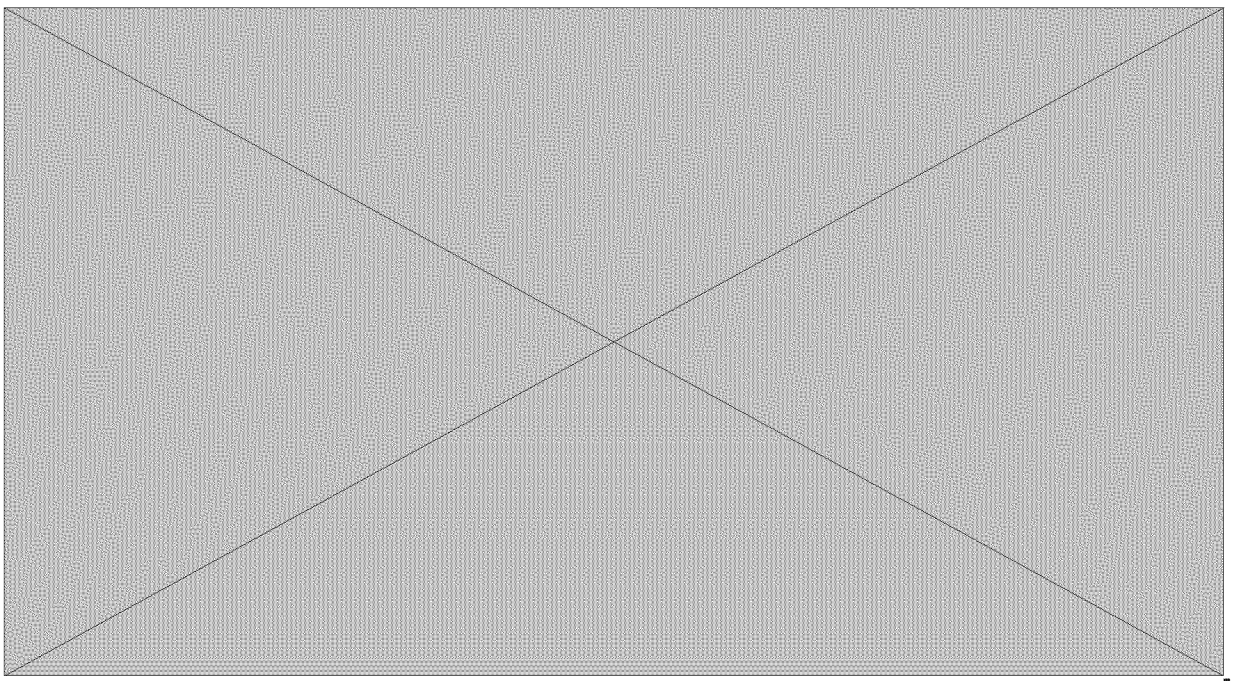
Matthew Cimino
117 Mockingbird Lane
Georgetown, TX 78633

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Global Energy Institute
Sent: Fri 10/27/2017 5:57:39 PM
Subject: Energy Round Up

Energy Roundup

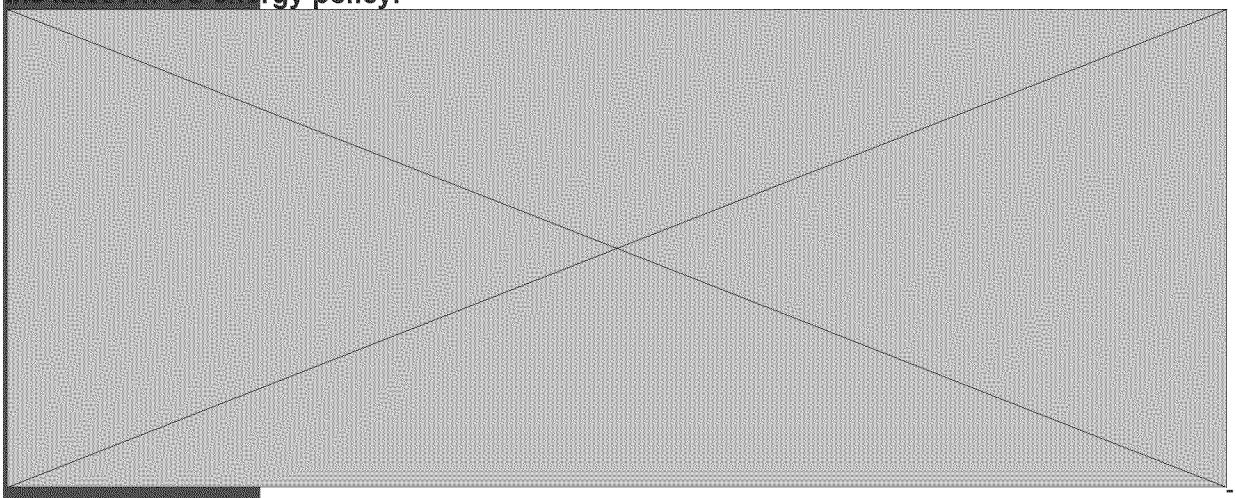
The Energy Tracker is Here

As the Trump Administration moves forward with an ambitious energy and environmental reform agenda, the Global Energy Institute and the law firm Beveridge & Diamond have launched a comprehensive Energy Tracker to help follow key regulatory, judicial and legislative developments. Check it out here!



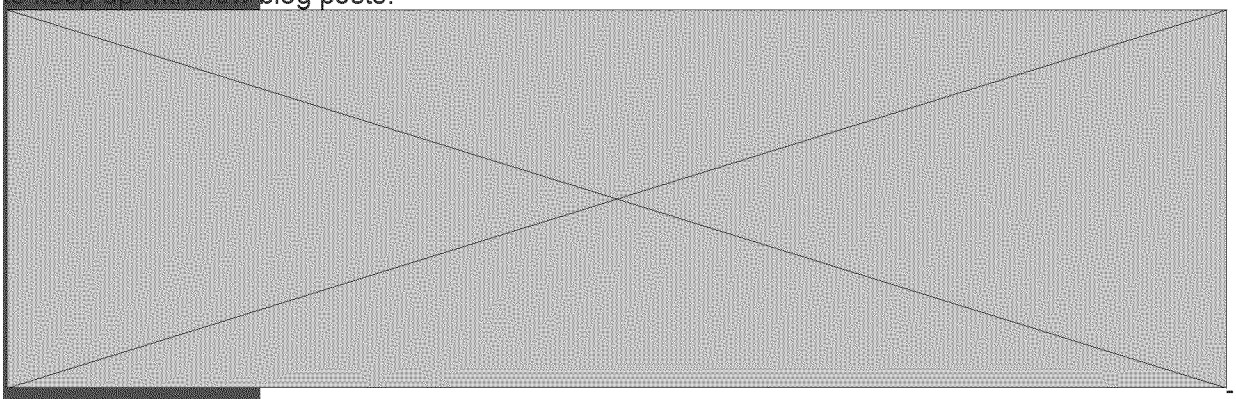
GEI on the Road: Chicago

GEI's Christopher Guith was on the road in Chicago talking to state and local chambers about the latest in US energy policy.



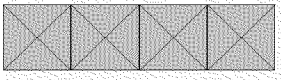
Fuel for Thought

This month, we released **our new blog, Fuel for Thought**, which features deep dives into energy policies and regulations from Congress and the Administration, details on our latest reports, energy explainers and insights. Check out Stephen Eule's latest blog on America's increasing crude exports and the subsequent benefits to our economy, job growth and more. If you like what you read, sign up to keep up with new blog posts!

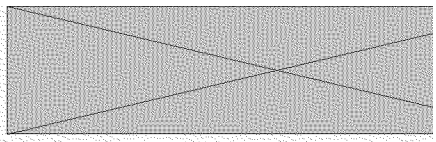


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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Rick Smith
Sent: Tue 10/31/2017 3:55:43 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Rick Smith
1725 Ryan Ct
El Dorado, KS 67042

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: webmaster@ali-cle.org
Sent: Tue 11/28/2017 1:27:33 PM
Subject: ALI CLE: Access to the Materials for a Course You Plan to Attend

ALI CLE home | myALI-CLE

Thank you for registering for an ALI CLE course. **For your convenience, and to help make a greener world, your course materials will be available exclusively in digital form.** You may access and download the course materials at the Digital Content Library tab of your myALI-CLE account.

To login visit: http://my.ali-cle.org and enter your Username: dravis.samantha@epa.gov. If you have forgotten your password, please use the Forgot Password function on the login page.

The course materials that you have been given access to are from the following program: **Clean Water Act: Law and Regulation.** Please be sure to download these materials before the course so that you will have them handy.

Any last-minute submissions from the faculty will be made available before or during the course via a special link that will be e-mailed to all registrants.

NOTE TO IN-PERSON ATTENDEES: If you are attending in-person, please be sure to bring a laptop or tablet with you to the course to access the materials and any last-minute submissions on-site.

NOTE TO WEBCAST ATTENDEES: If you are attending by webcast, follow the instructions you received in your Webcast Confirmation email to attend the program.

Sincerely,
ALI CLE Customer Service
4025 Chestnut Street
Philadelphia, PA 19104

CustomerService@ali-cle.org

1-800-CLE-NEWS

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Chas Graf
Sent: Tue 10/10/2017 8:22:43 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

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Thank you.

Chas Graf
610 Thornhill drive
Lafayette Hill, PA 19444

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Jarrett Keck
Sent: Tue 10/31/2017 3:53:33 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Jarrett Keck
1528 East 20th Street
Tulsa, OK 74120

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Tue 11/28/2017 1:03:42 PM
Subject: Sale Ends Today

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From: Rob Underwood
Location: 3500 WJCN
Importance: Normal
Subject: Accepted: To be rescheduled: Meeting with the Petroleum Marketers Association of America (PMAA)
Start Date/Time: Thur 10/12/2017 3:00:00 PM
End Date/Time: Thur 10/12/2017 3:30:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Kaitlyn Ray
Sent: Tue 10/31/2017 3:50:28 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Kaitlyn Ray
300 S Union St
Wilmington, DE 19805

From: Rob Underwood
Location: 3500 WJCN
Importance: Normal
Subject: Accepted: To be rescheduled: Meeting with the Petroleum Marketers Association of America (PMAA)
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End Date/Time: Thur 10/12/2017 3:30:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Antonio Gomez
Sent: Tue 10/31/2017 3:49:59 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Antonio Gomez
318 S 38th St
Artesia, NM 88210

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Robert Courtney
Sent: Fri 10/6/2017 11:38:58 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Robert Courtney
114 W Tomlin Station Rd
Mickleton, NJ 08056

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Becca Evans
Sent: Tue 10/31/2017 3:47:59 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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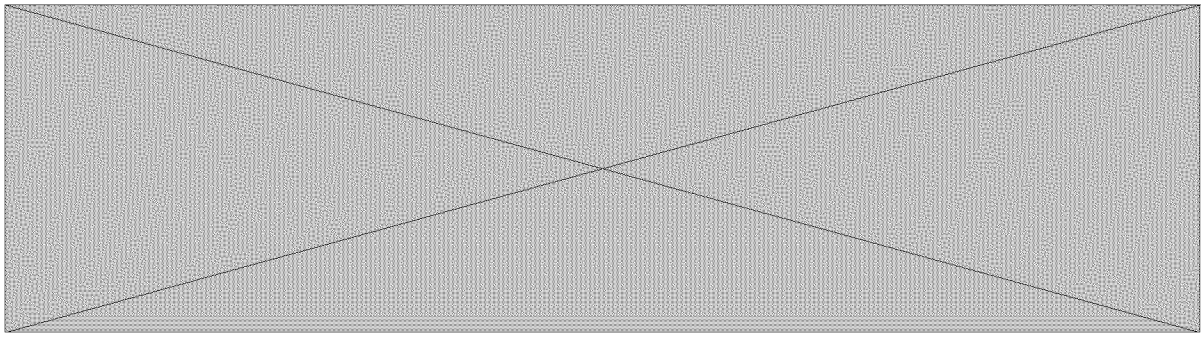
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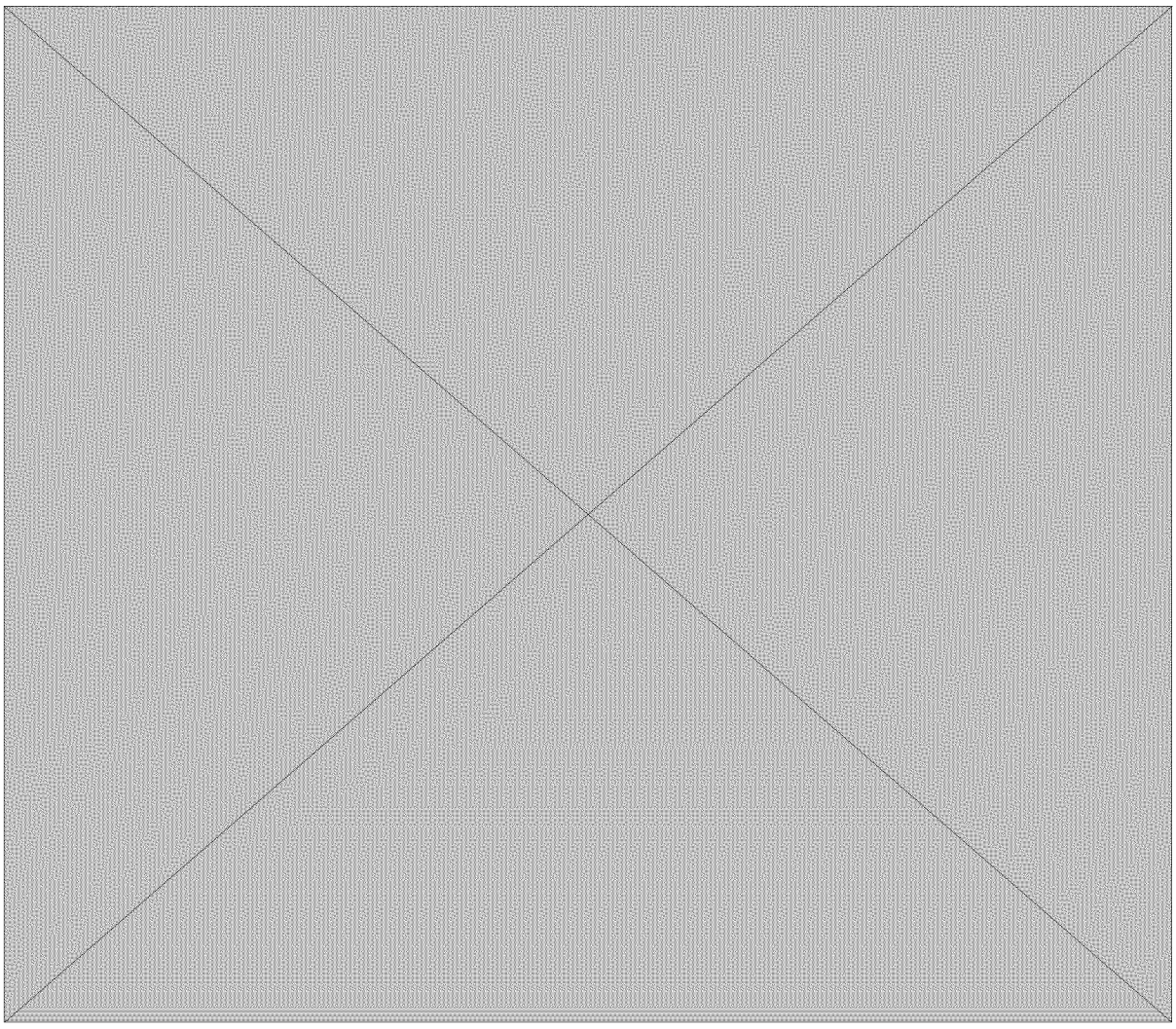
Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

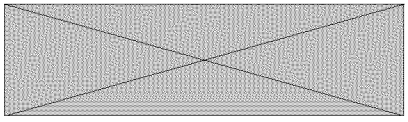
Becca Evans
1216 south 1200 west
woods cross, UT 84087

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Virtual Intelligence Briefing
Sent: Fri 10/13/2017 3:38:56 PM
Subject: Webinar - Taming the Dev/Test Beast ; $250 Gift Card raffle





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Virtual Intelligence Briefing
392 Mason Rd
Milford, New Hampshire 03055

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Ryan Dubuisson
Sent: Tue 10/31/2017 3:47:26 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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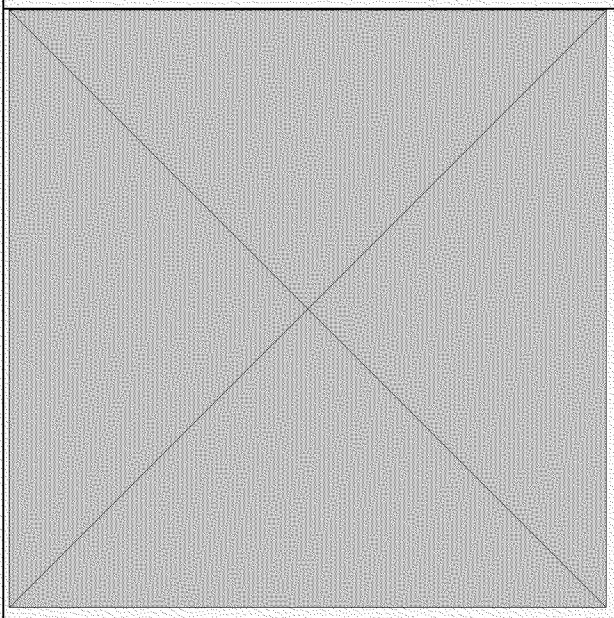
Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Ryan Dubuisson
2320 Taylor St
Dallas, TX 75201

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: OpenTable
Sent: Fri 10/6/2017 2:05:59 AM
Subject: Your Insider: Dine with your pup, non-traditional restaurant venues & 6 eye catching cocktails!

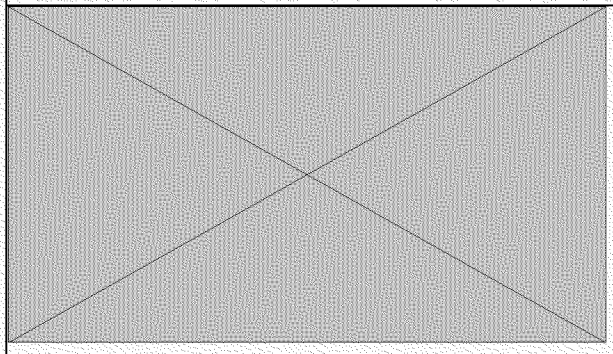
Washington, D.C. Area (Update)



Dining with Dogs

Brunch is better with your best buddy. Check out some of the dog-friendliest restaurants around the nation.

SEE THE LIST

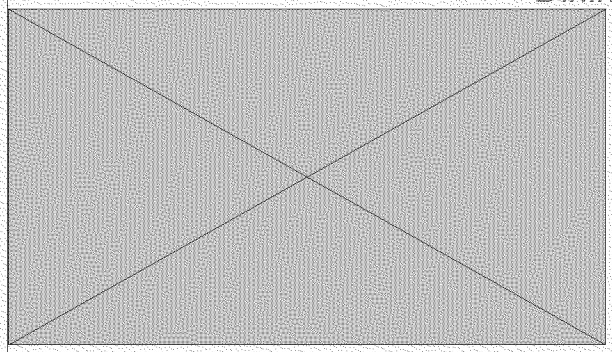


Major Remodels

Police headquarters and churches clean up nice. See some of the top restaurants in converted spaces.

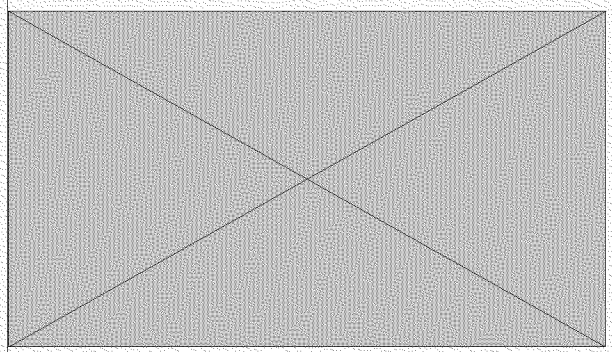
SEE THE LIST

Dining Buzz



Order in Advance

Gold leaf chicken and truffles—long prep times and rare ingredients require special ordering these dishes.
LEARN MORE



Sippable Smoke

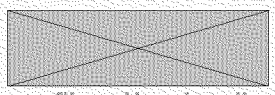
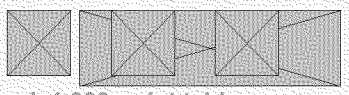
These eye-catching cocktails with dry ice add flair to your drink game and followers to your Instagram.
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.

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Research Analytics
Sent: Fri 10/13/2017 3:07:21 PM
Subject: [SPAM] Reminder: Special Invitation

Dear Samantha,

As a reminder, RainKing conducting an exclusive survey of select professionals to identify **supply chain and operations management** trends.

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Best regards,

RainKing Research
analytics@rainkingresearch.com

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Suzanne Thompson
Sent: Tue 10/31/2017 3:47:21 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Suzanne Thompson
1700 S Union Ave
Tulsa, OK 74107

From: Kime, Robin
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: AGA and NGVA Regulatory Reform Discussion Focusing on the Subpart W Reporting Rule and the PCB Rules
Start Date/Time: Fri 10/6/2017 2:00:00 PM
End Date/Time: Fri 10/6/2017 2:30:00 PM
AGA 05 15 2017 Comments on EPA Rule Review Docket EPA-HQ-OA-2017-0190.pdf
NGVA EPA Regulatory Review May 2017 Final.pdf

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Kathryn Clay, Allison Cunningham and Pamela Lacey

Request: The American Gas Association (AGA) and Natural Gas Vehicles of America (NGVA) would like to arrange a follow-up meeting with you to discuss our ideas for regulatory reform, as described in our attached comments, filed May 15, 2017 in Docket EPA-HQ-OA-2017. AGA's comments address several programs, but at this meeting, we will want to focus on revisions we have suggested to improve: (1) the Subpart W reporting rule and (2) the PCB rules.

Contact:
Pamela A. Lacey | Chief Regulatory Counsel
American Gas Association<http://www.aga.org>

400 N. Capitol St., NW | Washington, DC | 20001
P: 202-824-7340 | M: 202-809-6565 | F: 202-824-9190 | placey@aga.org
<mailto:placey@aga.org>

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Steve Brady
Sent: Fri 10/13/2017 2:54:58 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Steve Brady
5765 Landis Greene Drive
Doylestown, PA 18902

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Erica Waugh
Sent: Tue 10/31/2017 3:47:25 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Erica Waugh
5335 Bent Tree Forest Drive #225
Dallas, TX 75248

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Robert Spencer
Sent: Tue 10/31/2017 3:45:08 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

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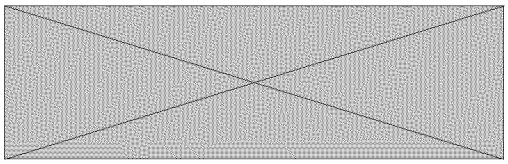
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Thank you.

Robert Spencer
1510 s. 21 st.
Artesia, NM 88210

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Fri 10/13/2017 11:22:07 AM
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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Patty Williams
Sent: Tue 10/31/2017 3:44:32 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Patty Williams
2828 N. Harwood, Suite 1300
Dallas, TX 75201

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Paul Scharre
Sent: Tue 11/21/2017 6:40:05 PM
Subject: CNAS Artificial Intelligence & Global Security Summit: Videos Now Available

Recap of the Artificial Intelligence and Global Security Summit.

CNAS Technology & National Security Fall Summit

Artificial Intelligence and Global Security Recap

On November 1, 2017, the Center for a New American Security (CNAS) convened technology leaders and top policymakers at the Artificial Intelligence and Global Security Summit to explore the state of artificial intelligence and discuss the implications of the AI revolution on global security.

Photos and videos from the event are now available both on the event webpage and the links below.

A transcript of the keynote discussion with Eric Schmidt is also available here.

The Artificial Intelligence and Global Security Summit is the first of many projects, initiatives, and events by the ***CNAS Artificial Intelligence and Global Security Initiative****.*

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Videos

Welcome & Opening Remarks
Richard Fontaine, *President, Center for a New American Security*
Paul Scharre, *Senior Fellow and Director of the Technology and National Security Program, CNAS*

Opening Keynote
Dr. Andrew W. Moore, *Dean, School of Computer Science, Carnegie Mellon University*

Keynote Address by Eric Schmidt
Eric Schmidt, *Executive Chairman, Alphabet Inc. and Chair, Defense Innovation Board*
Paul Scharre, *Senior Fellow and Director of the Technology and National Security*

Program, CNAS (moderator)

AI Safety and Cybersecurity
Dr. Dario Amodei, *Research Scientist, OpenAI*
Dr. Kathleen Fisher, *Professor, Chair of the Computer Science* Department, Tufts University
Dr. Joanna Bryson, *Associate Professor of Computer Science, University of Bath*
Amir Husain, *Founder and CEO, SparkCognition, Inc.*
Tom Simonite, *Senior Writer, WIRED (moderator)*

Humans + Machines
Dr. Jeff Clune, *Assistant Professor of Computer Science, University of Wyoming*
Kimberly Jackson Ryan, *Senior Human Systems Engineer, Draper Laboratory*
Dr. John Hawley, *Engineering Psychologist, Army Research Laboratory*
Dr. Caitlin Surakitbanharn, *Research Scientist, Purdue University*
Dan Lamothe, *National Security Writer, The Washington Post (moderator)*

Interviews with AI Experts
Dr. Kathleen Fisher, *Professor, Chair of the Computer Science* Department, Tufts University
Dr. Jeff Clune, *Assistant Professor of Computer Science, University of Wyoming*
Amir Husain, *Founder and CEO, SparkCognition, Inc.*

AI Policy
Dr. Rebecca Crootof, *Research Scholar and Information Security Project Executive Director, Yale Law School*
Jack Clark, *Strategy and Communications Director, OpenAI*
Dr. Lynne Parker, *Associate Dean of Faculty Affairs and Engagement, Tickle College of Engineering, University of Tennessee*
Kerstin Vignard, *Chief of Operations, UN Institute for Disarmament Research*
Phil Stewart, *Military and Intelligence Correspondent, Reuters* (moderator)

Closing Keynote
Dr. Mary "Missy" Cummings, *Director of the Humans and Autonomy Lab at Duke University and former Navy fighter pilot*

The Center for a New American Security (CNAS) is an independent and nonpartisan research institution that develops strong, pragmatic and principled national security and defense policies. CNAS leads efforts to help inform and prepare the national security leaders of today and tomorrow.

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Washington, DC 20005
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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Theresa Sica
Sent: Mon 10/23/2017 1:02:47 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Theresa Sica
5500 Bingham Street
Philadelphia, PA 19120

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Shana Olivas
Sent: Tue 10/31/2017 3:42:32 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Shana Olivas
307 McArthur Ave
Artesia, NM 88210

From: Kime, Robin
Location: 3500 WJCN
Importance: Normal
Subject: VNG.co - Natural Gas Vehicles
Start Date/Time: Mon 10/23/2017 3:00:00 PM
End Date/Time: Mon 10/23/2017 3:30:00 PM

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Purpose: Meeting to discuss Natural Gas Vehicles

Contact: "Tucker, Jamie" <jtucker@AKINGUMP.COM>

Attendees:

Robert Friedman, VNG

Bon Atkinson, VNG

Larry Highbloom, VNG

Brad Couch, Ariel Corp

Jamie Tucker, Akin Gump.

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Alex Ifkovits
Sent: Tue 10/31/2017 3:42:00 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Alex Ifkovits
843 S Good Latimer Expressway, Apt. 3310
Dallas, TX 75226

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Tue 10/10/2017 12:22:36 PM
Subject: Ethics and Key Aspects of Attorney-Client Privilege

Please add ALICLE@learn.ali-cle.org to your address book. Thank you.
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Attorney-Client Privilege: Key Aspects All Lawyers Should Know

Provides 1.5 hours of ethics instruction

Wednesday, November 1, 2017 | 1:00 - 2:30 p.m. Eastern

Video Webcast

Prerecorded July 19, 2017

Do you know when discussions with your clients or prospective clients are protected? Find out with this fast-paced, comprehensive ethics program!

Join Tom Spahn, an experienced ethics advisor and speaker, as he explores the applicability of the attorney-client privilege to communications with prospective, individual, government, and joint clients.

Topics include:

- distinguishing between business and legal advice
- unprotected background information
- the critical "legal advice" element
- the fiduciary and crime-fraud exceptions
- the effect of third parties' presence on the privilege
- the joint defense/common interest doctrine

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Thomas E. Spahn, McGuireWoods LLP *(ALI Member)*

Group Rate

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Women Rule
Sent: Tue 12/5/2017 6:27:25 PM
Subject: Tune In NOW | Women Rule Fifth Annual Summit Afternoon Session



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This email was sent to dravis.samantha@epa.gov

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Brian Urquidez
Sent: Tue 10/31/2017 3:41:29 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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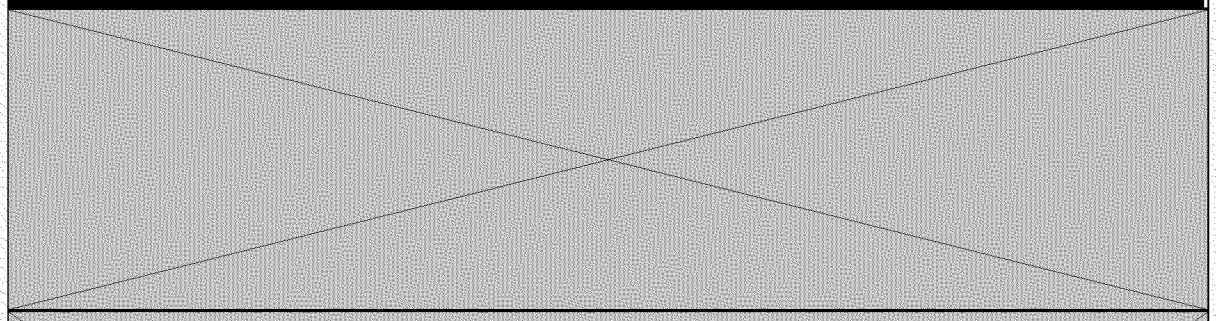
Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

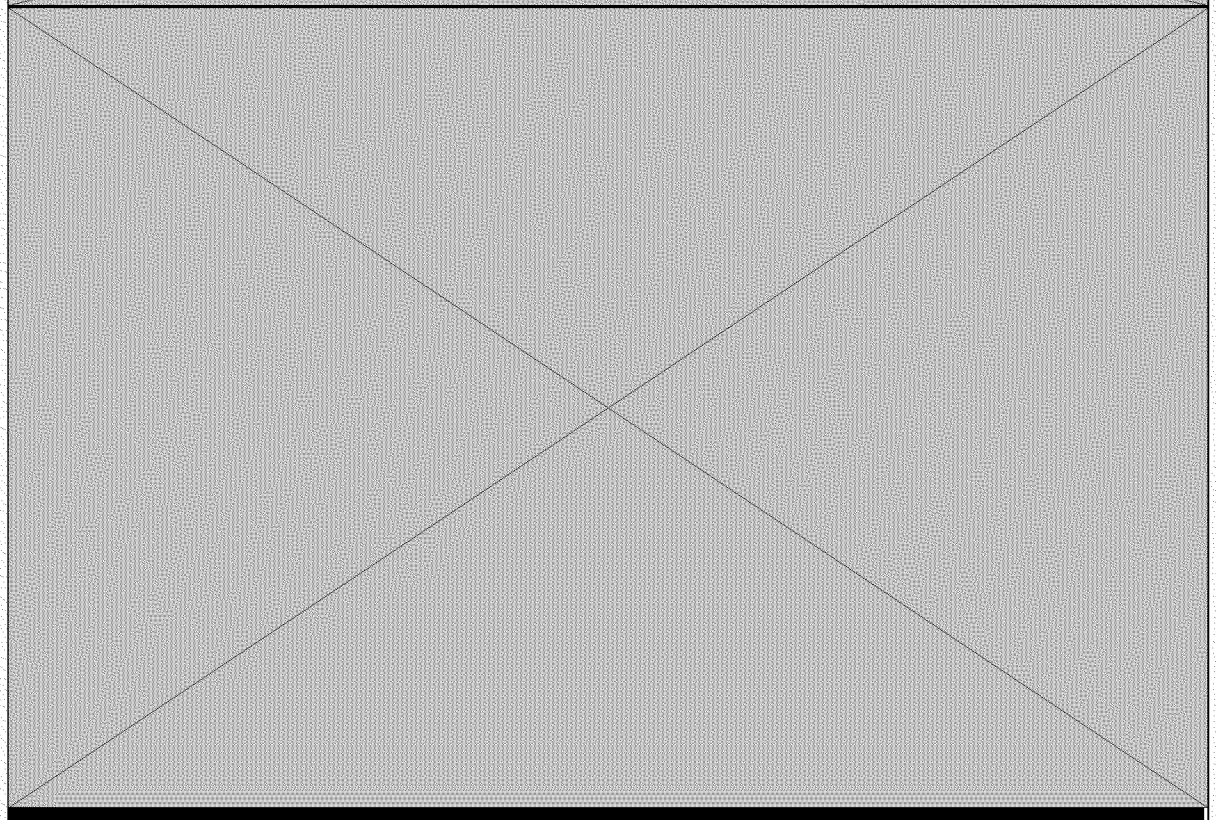
Thank you.

Brian Urquidez
11050 Clearstream Ln
Frisco, TX 75035

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Solve ME/CFS Initiative
Sent: Tue 11/21/2017 6:01:12 PM
Subject: Will your friends and family see Unrest?

View it in your browser.



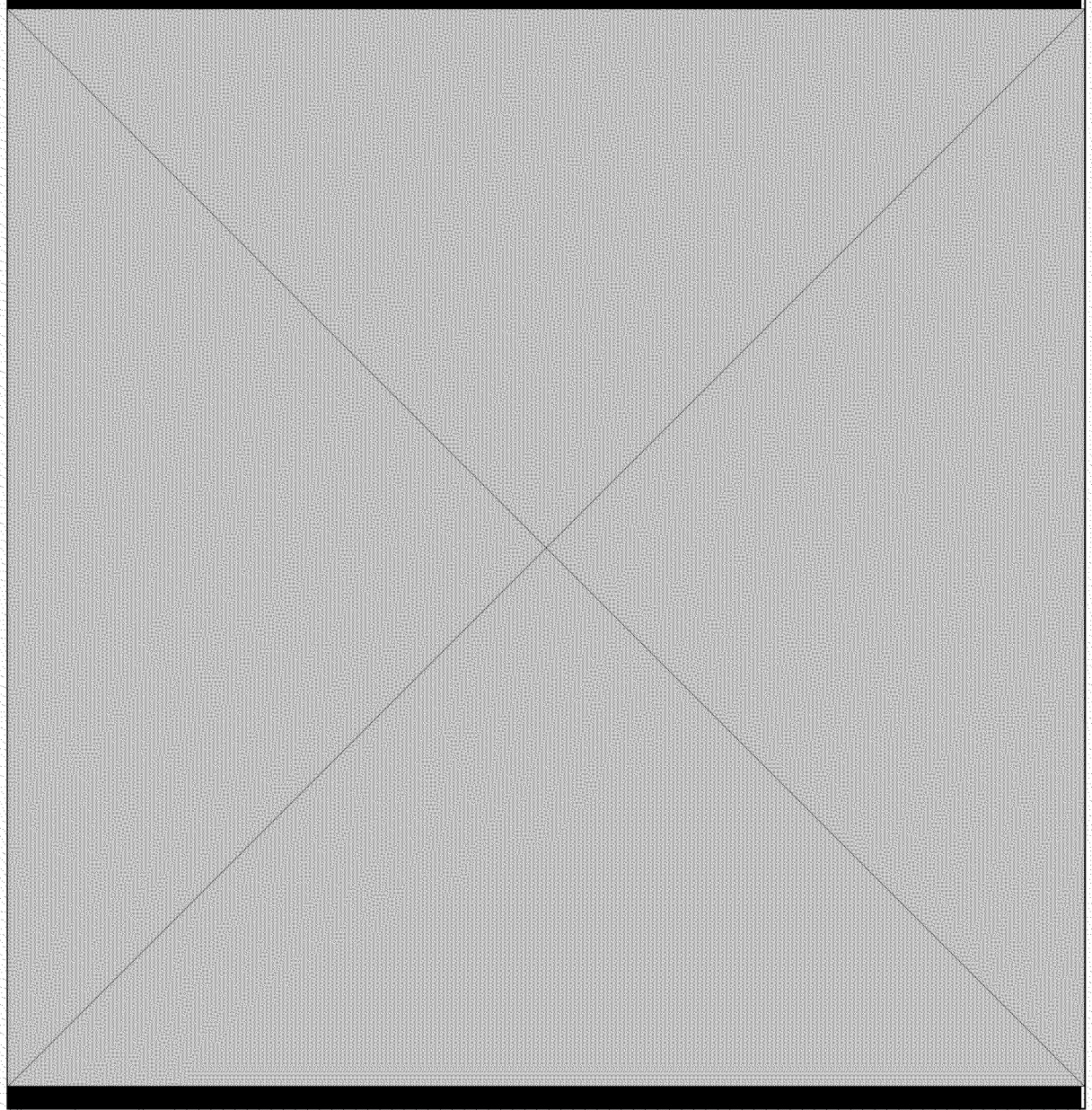


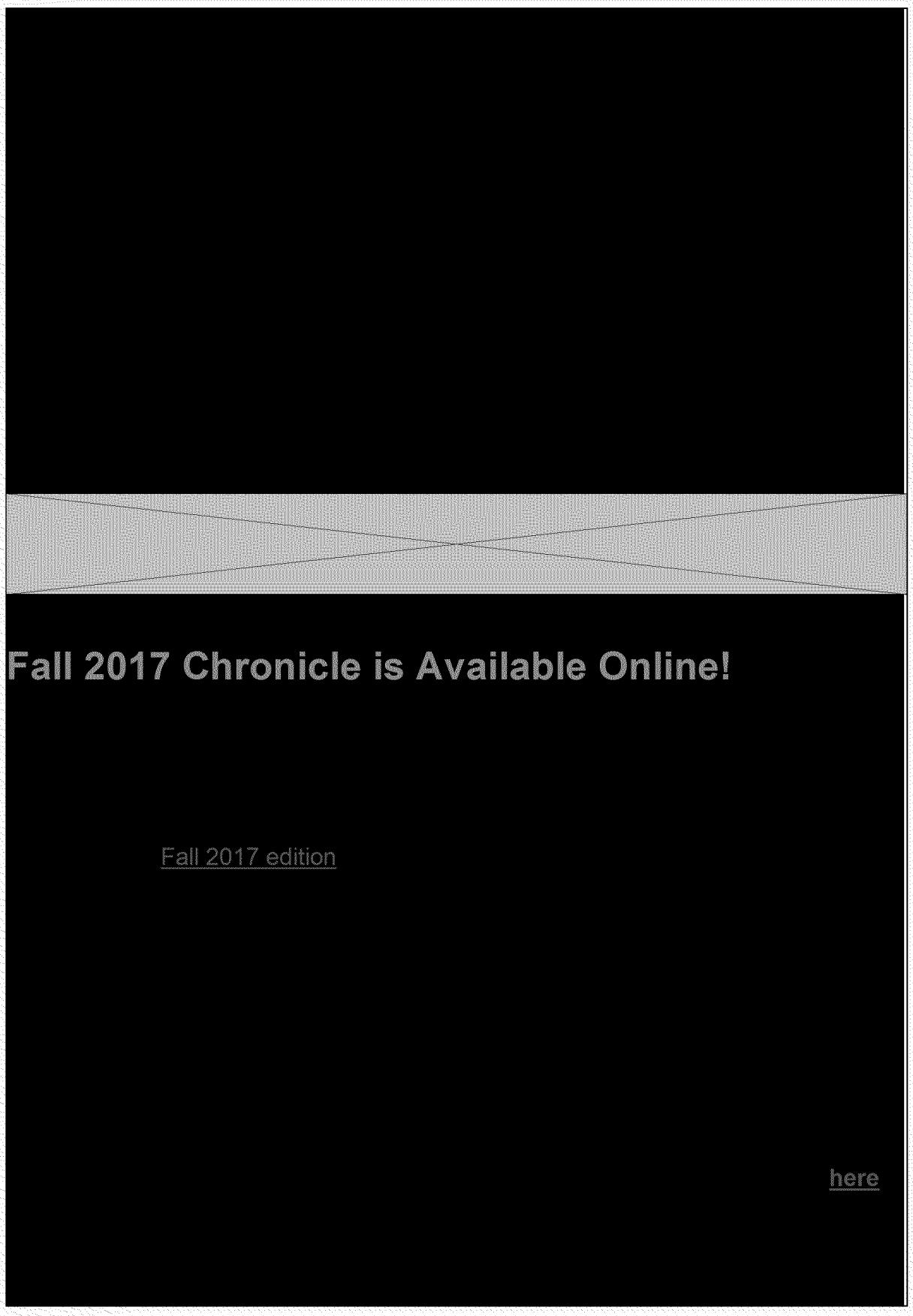
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#TimeForUnrest

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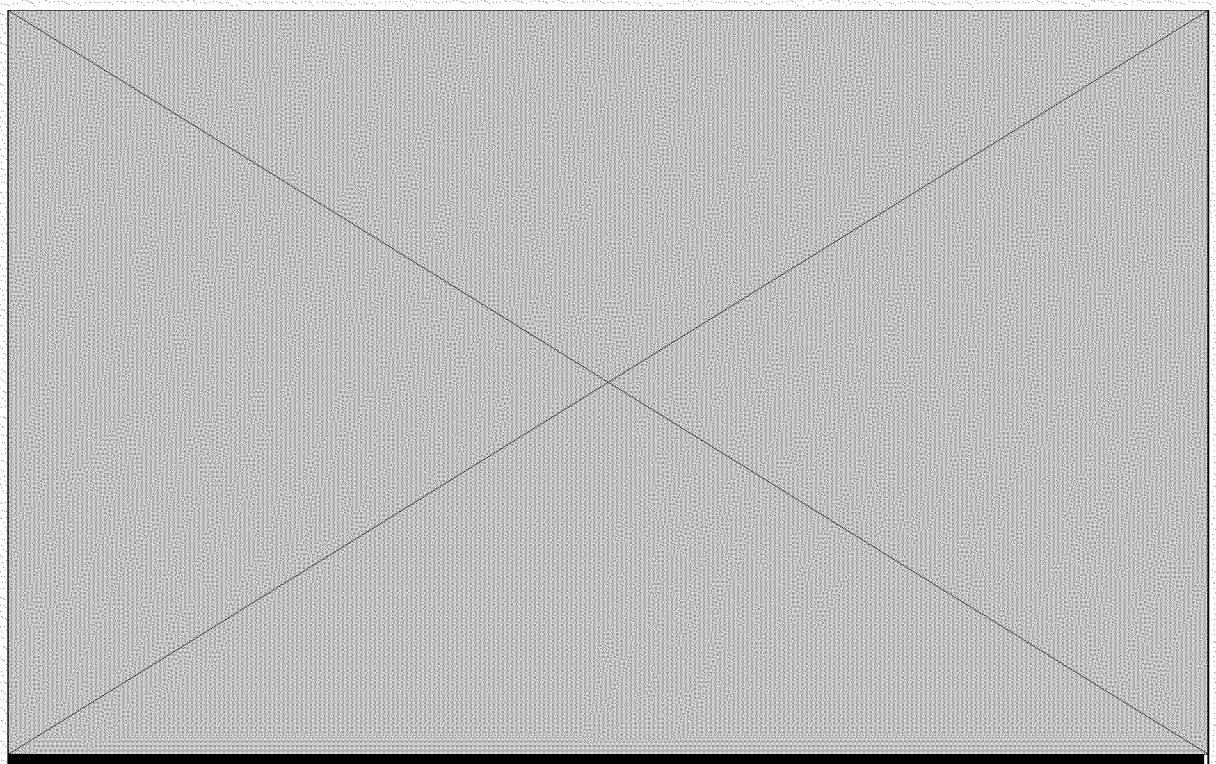




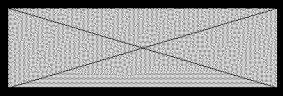
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Fall 2017 edition

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Thur 10/26/2017 11:04:28 AM
Subject: Ethics and the Attorney-Client Privilege, on 11/1

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Attorney-Client Privilege: Key Aspects All Lawyers Should Know

Provides 1.5 hours of ethics instruction

Wednesday, November 1, 2017 | 1:00 - 2:30 p.m. Eastern

Video Webcast

Prerecorded July 19, 2017

Make sure that you can identify when discussions with your clients or prospects are protected with this comprehensive program led by experienced ethics speaker and advisor, **Tom Spahn**.

This 90-minute video webcast explores the applicability of the attorney-client privilege to communications with prospective, individual, government, and joint clients.

Topics include:

- the critical "legal advice" element and distinguishing between business and legal advice
- the effect of third parties' presence on the privilege and unprotected background information
- the fiduciary and crime-fraud exceptions
- the joint defense/common interest doctrine

Register now for this practical webcast. Register two or more from your organization and **save**!

Faculty

Thomas E. Spahn, McGuireWoods LLP *(ALI Member)*

Group Rate

Significant discounts are available when two or more registrants in the same physical location view or listen to an ALI CLE webcast or telephone seminar using one computer connection or telephone. **Save up to 50%**!

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Arthur Sutherland
Sent: Thur 10/12/2017 10:16:30 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Arthur Sutherland
5330 Chichester Ave
Aston, PA 19014

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Tim McKinney
Sent: Tue 10/31/2017 3:41:18 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

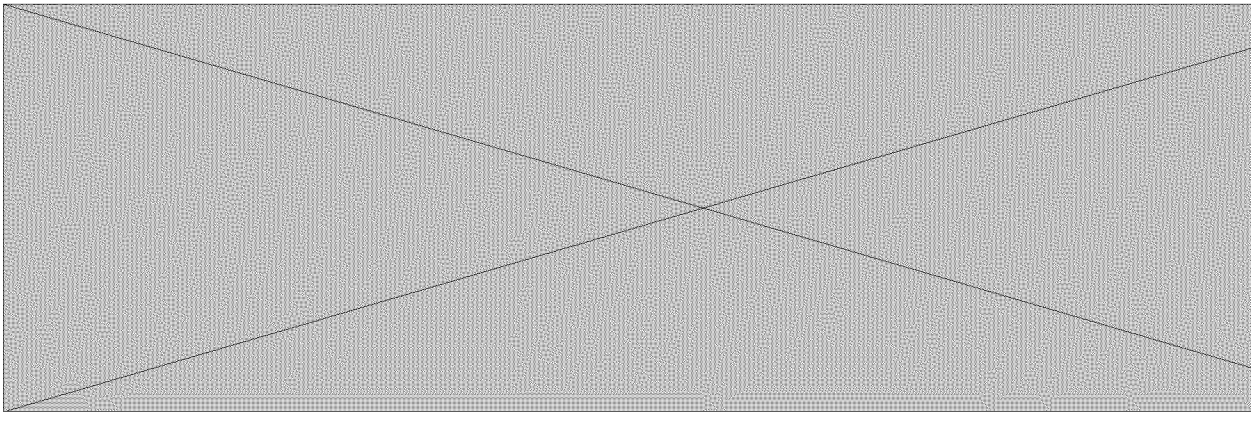
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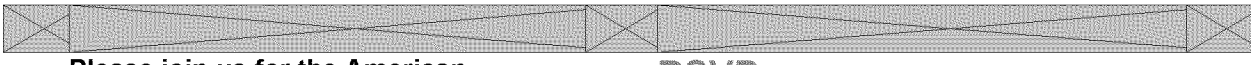
Thank you.

Tim McKinney
11731 S Vine St
Jenks, OK 74037

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Jack Gerard
Sent: Tue 12/5/2017 3:32:09 PM
Subject: You're Invited to API's State of American Energy 2018



STATE OF AMERICAN ENERGY 2018 | HOW NATURAL GAS & OIL ARE POWERING PAST IMPOSSIBLE



Please join us for the American Petroleum Institute's 2018 State of American Energy luncheon. As the midterm election year begins we will remind lawmakers, policymakers and the public that America's domestic energy abundance is helping to meet the ever-growing demand for energy, but also how those same resources are the building blocks for many of the products that make our modern society safer, advance the medical arts, and spur creativity and scientific innovation through our Power Past Impossible advertising campaign.

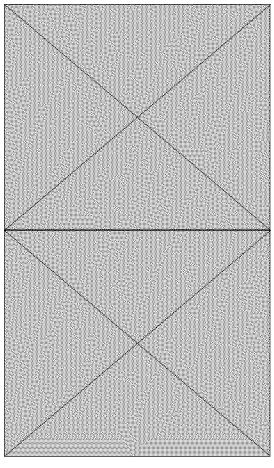
From energy that keeps our homes, offices, and schools lit and warm, to the modern fuels that not only power our vehicles but also help to improve our environment, to the modern pharmaceuticals that improve the health and well-being of millions. Power Past Impossible makes the connection between natural gas, oil and their derived products and their fundamental role in our society, which is essential to positively advance the national energy policy discussion.

Sincerely,

JACK N. GERARD

RSVP
BY DECEMBER 22ND

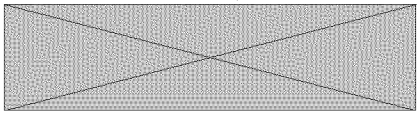
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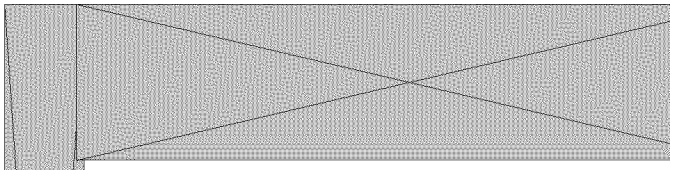


When
TUESDAY, JANUARY 9, 2018
11:30 A.M.-1:00 P.M.

Where
Ronald Reagan Building and
International Trade Center
Atrium Ballroom

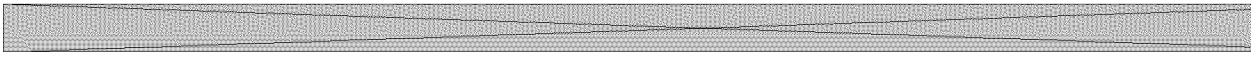
President and CEO, API







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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Morning Consult
Sent: Tue 11/14/2017 3:17:02 PM
Subject: Final Reminder: Earn a $25 Amazon Gift Card for Your Opinion!

Morning Consult is conducting a quick 10 minute survey, and we are interested in your opinion.

For your time, we are offering a $25 Amazon.com gift card, sent via email by Amazon.com, or the option to donate $25 to the American Red Cross, within 10 days of completing the survey, in compliance with Senate and House Rules on outside compensation.

Click here to start the survey.

The survey is available 24 hours a day for your convenience. This survey works on most desktops, laptops, tablets and mobile phones.

Thank you in advance, your input is important to us.

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Mike Hanlon
Sent: Tue 10/31/2017 3:40:51 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Mike Hanlon
12825 E Cherry Creek Ct
Wichita, KS 67230

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Sydne Williams
Sent: Mon 10/2/2017 3:56:29 PM
Subject: ADSI Services Follow- Up

Good Morning Samantha,

I hope all has been well since we last spoke in FY'17 regarding my firm ADSI and our service offerings. I am following-up with you per your request to reintroduce our company for the start of FY'18 and opportunities that we may assist you and your programs team with.

ADSI is a CMMI Maturity Level 3, SDB, 8(a) STARS II firm. We are a holder of the GSA 8(a) STARS II GWAC and GSA IT schedule 70 offering management consulting and information technology services to Federal and State/Local agencies. We have extensive experience currently doing business with the federal government providing the services listed below.

Our service offerings include:

- Cyber Security
- SCORM Compliant eLearning Courseware Development
- Agile Project Management and Grants Management
- Business Process Management
- Software Engineering
- Mobile and Web Development
- Database Management - MS SQL Server, Oracle
- Microsoft SharePoint Custom Workflows, Reports and Dashboards
- Network Management and Help Desk Support
- Section 508 Compliance

If any of this is of interest to you, I would love to schedule a call or meeting to discuss how our services can assist in achieving your objectives.

Feel free to contact me at 202.659.2807 at your convenience and please share this email with your programs office.

Thank you and I look forward to your thoughts!

Best,

Sydne M Williams

Marketing Analyst

Aligned Development Strategies, Inc. (ADSI)

1900 L Street, NW, Suite 600

Washington, DC 20036

Certified CMMI Level 3

SDB, MBE, LSDBE

GSA 8(a) STARS II, IT 70 Schedule

DHS Eagle II (Core 4)

202-659-2807 Office

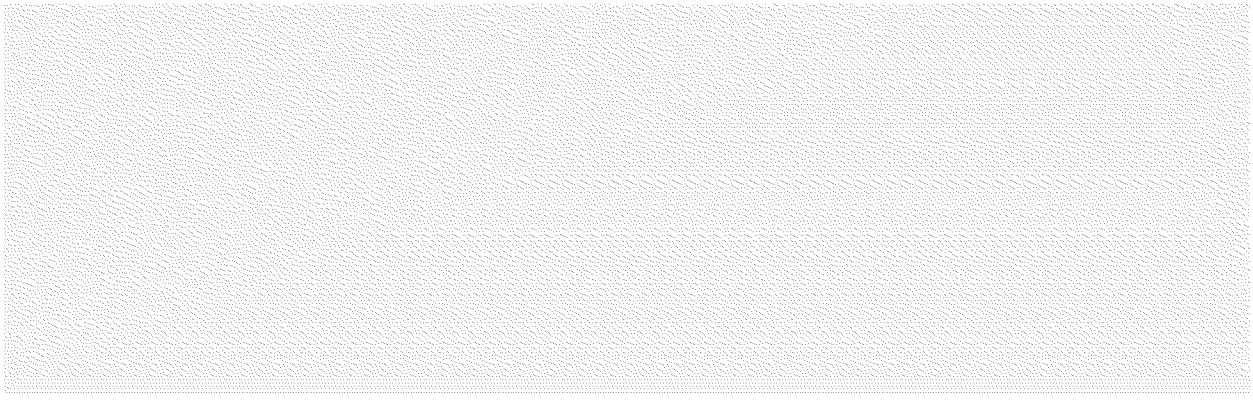
202-659-2810 Fax

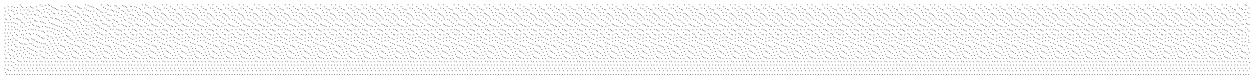
202-744-4550 Mobile

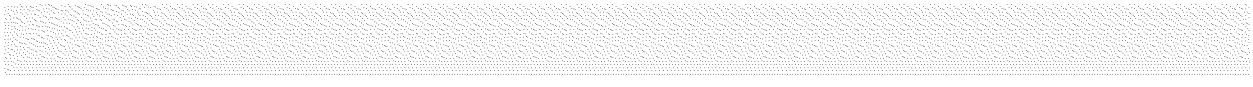
swilliams@goadsi.com

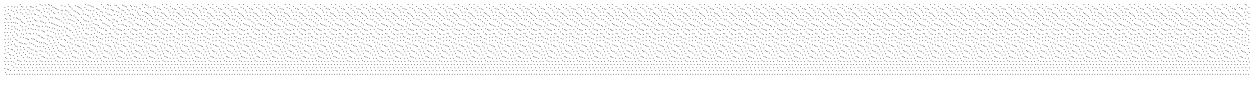
www.goADSI.com

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: InsideSources
Sent: Tue 12/5/2017 2:18:00 PM
Subject: Why Millennial Avocado Lovers Should Care About Trade

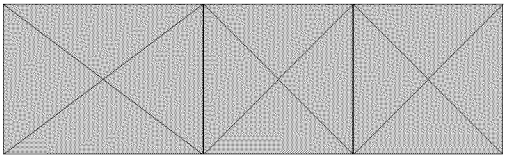


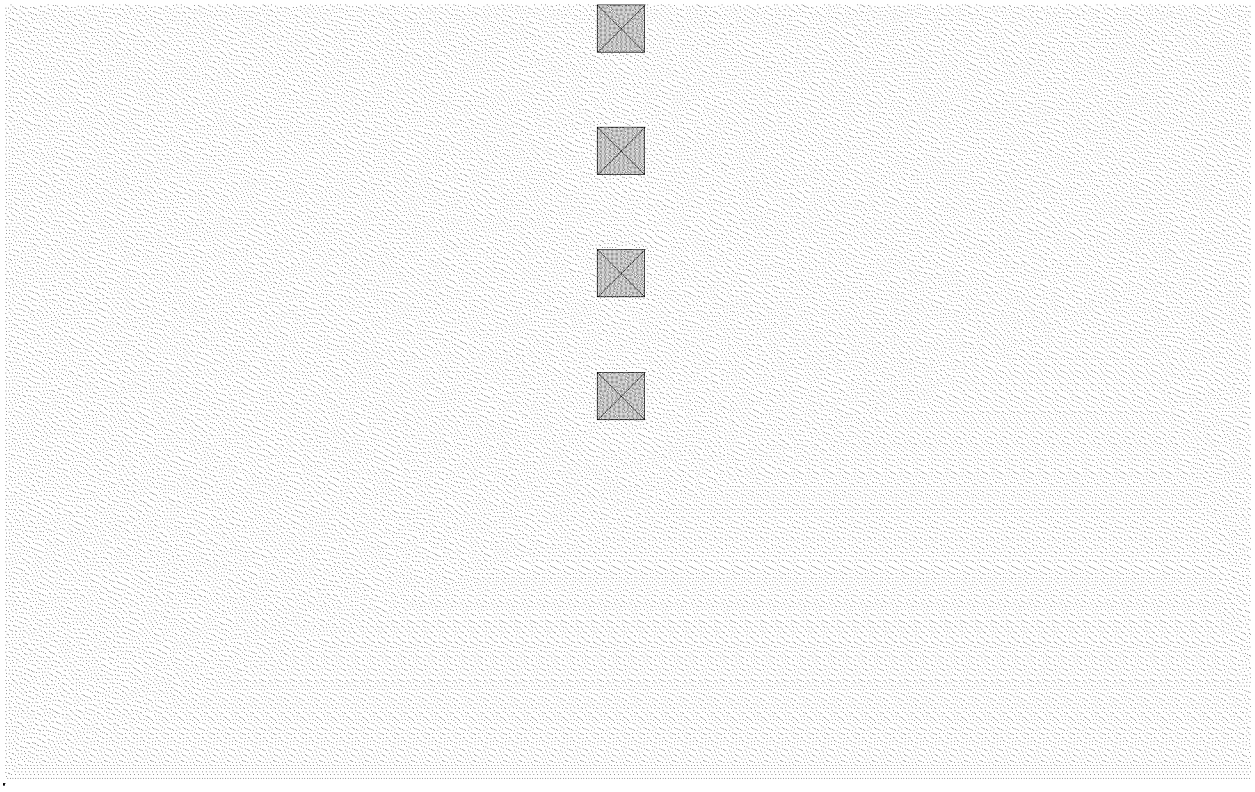




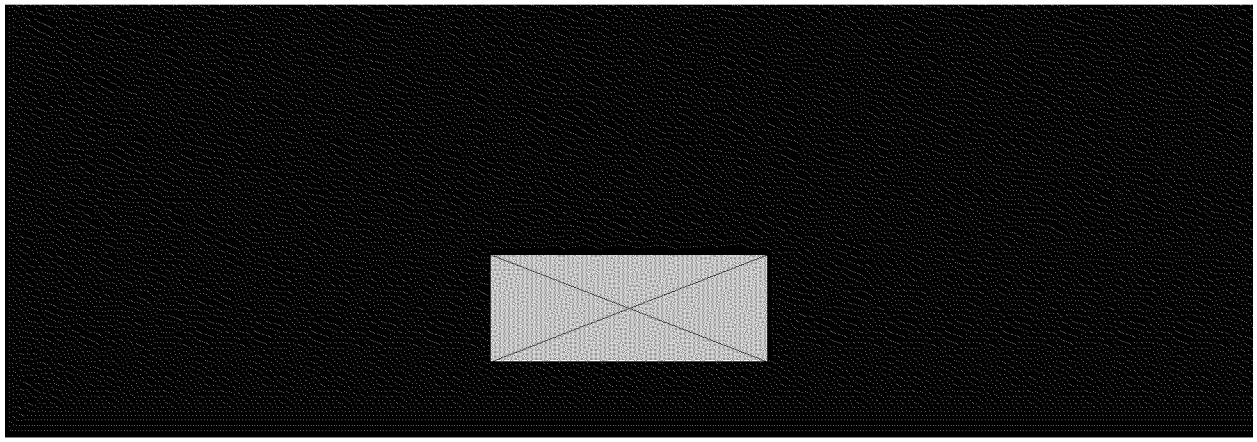








To: Dravis, Samantha[dravis.samantha@epa.gov]
From: ECOS
Sent: Tue 11/14/2017 2:25:18 PM
Subject: Mark Your Calendar for ECOS' 2018 Spring Meeting!



To: Dravis, Samantha[dravis.samantha@epa.gov]
Cc: Shea, Quin[QShea@eei.org]
From: Viator, Brad
Sent: Wed 10/25/2017 11:30:30 PM
Subject: Re: EPA Releases Energy Independence Report

Thanks for sharing. And thanks again for your time today. It was very insightful for our group to understand your priorities better.

Brad Viator
Edison Electric Institute
202-257-5394

Sent from my iPhone

On Oct 25, 2017, at 3:18 PM, Dravis, Samantha <dravis.samantha@epa.gov> wrote:

This email originated from an external sender. Use caution before clicking links or opening attachments. For more information, visit The Grid. Questions? Please contact ITSupport@eei.org or ext. 5100.

Sent from my iPhone

Begin forwarded message:

From: "EPA Press Office" <press@epa.gov>
Date: October 25, 2017 at 3:02:33 PM EDT
To: "dravis.samantha@epa.gov" <dravis.samantha@epa.gov>
Subject: EPA Releases Energy Independence Report
Reply-To: press@epa.gov

EPA Releases Energy Independence Report

"We can be both pro-jobs and pro-environment," – EPA Administrator Scott Pruitt

WASHINGTON (October 25, 2017) - Today, the U.S. Environmental Protection Agency (EPA) released its final report on how EPA, under Administrator Scott Pruitt's leadership, is implementing President Trump's Executive Order 13783 to curb regulatory burdens in order to promote energy production and economic growth – while protecting human health and the environment.

"EPA is committed to President Trump's agenda," said EPA Administrator Scott Pruitt. "We can be both pro-jobs and pro-environment. At EPA, that means we are working to curb unnecessary and duplicative regulatory burdens that do not serve the American people – while continuing to partner with states, tribes and stakeholders to protect our air, land, and water."

EPA released its final report in accordance with President Donald Trump's Executive Order (EO) 13783. Notably, the report provides a look at how EPA is working to curb regulatory burdens that unnecessarily encumber energy production, constrain economic growth, and prevent job creation while protecting human health and the environment. The report can be found online here.

The report discusses nine EPA actions on energy-related regulations covered by EO 13783. It further includes the following four initiatives EPA plans in undertaking to implement this order:

1. **New Source Review reform (NSR)** – EPA is establishing an NSR Reform Task Force to review and simplify the NSR application and permit process.

2. **National Ambient Air Quality Standards (NAAQS) reform** – EPA plans to use the newly formed Ozone Cooperative Compliance Task Force to review administrative options to meaningfully improve air quality as it relates to ozone. EPA will also work to streamline the approval of state air pollution plans, and eliminate EPA's backlog of state pollution plans.

3. **Robust Evaluations of the Employment Effects of EPA regulations** – Regulations impose high costs on American workers, particularly in the energy sector. Five environmental statutes state that EPA conduct continuing evaluations of potential shifts in employment that may result from implementation of these statutes. The Agency historically has not conducted these assessments. EPA intends to conduct these evaluations consistent with the statutes.

4. **Reestablishing the Smart Sectors Program** – EPA recently relaunched the Smart Sectors program to re-examine how it engages with American businesses to reduce unnecessary regulatory burdens, while protecting human health and the environment. (www.epa.gov/smartsectors).

Background

On March 28, 2017, President Trump signed Executive Order (EO) 13783 promoting clean and safe development of the United States' vast energy resources, while at the same time avoiding regulatory burdens that unnecessarily encumber energy production, constrain economic growth, and prevent job creation.

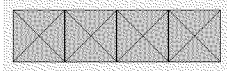
To that end, Section 2 of EO 13783 required an immediate review of all agency actions that potentially burden the safe, efficient development of domestic energy resources. Section 2 required the heads of agencies to review all existing regulations, orders, guidance documents, policies, and any other similar agency actions that potentially burden the development or use of domestically produced energy resources, with particular attention to oil, natural gas, coal, and nuclear energy resources.

Section 2 also required agencies to submit a plan on how the agency will carry out the review. For those agencies that submitted a plan, the agency was required to submit a draft final report to OMB and EOP offices within 120 days (by July 26, 2017). The EOP offices provided recommendations to the agencies to ensure the final reports that reflect the policies laid out in EO 13783.

Final reports were to be finalized within 180 days (by September 24, 2017) unless the OMB Director, in consultation with the other EOP officials, extend the deadline.

To assist agencies in the development of the EO 13783 reports, OMB developed guidance on May 8, 2017 providing additional direction to agencies. OMB directed Agencies to provide a number of pieces of information in the agency final reports and to publish the final report on the agency website and in the Federal Register.

Visit the EPA's Newsroom



U.S. Environmental Protection Agency
1200 Pennsylvania Avenue Northwest
Washington, D.C. 20004
Unsubscribe

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Bones
Sent: Tue 10/31/2017 3:39:43 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Michael Bones
1218 East 30th Place
Tulsa, OK 74114

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Sean Dobbins
Sent: Tue 10/31/2017 3:38:19 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Sean Dobbins
580 W 3rd St
Andover, KS 67002

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Frank Bernardo
Sent: Tue 10/31/2017 3:38:20 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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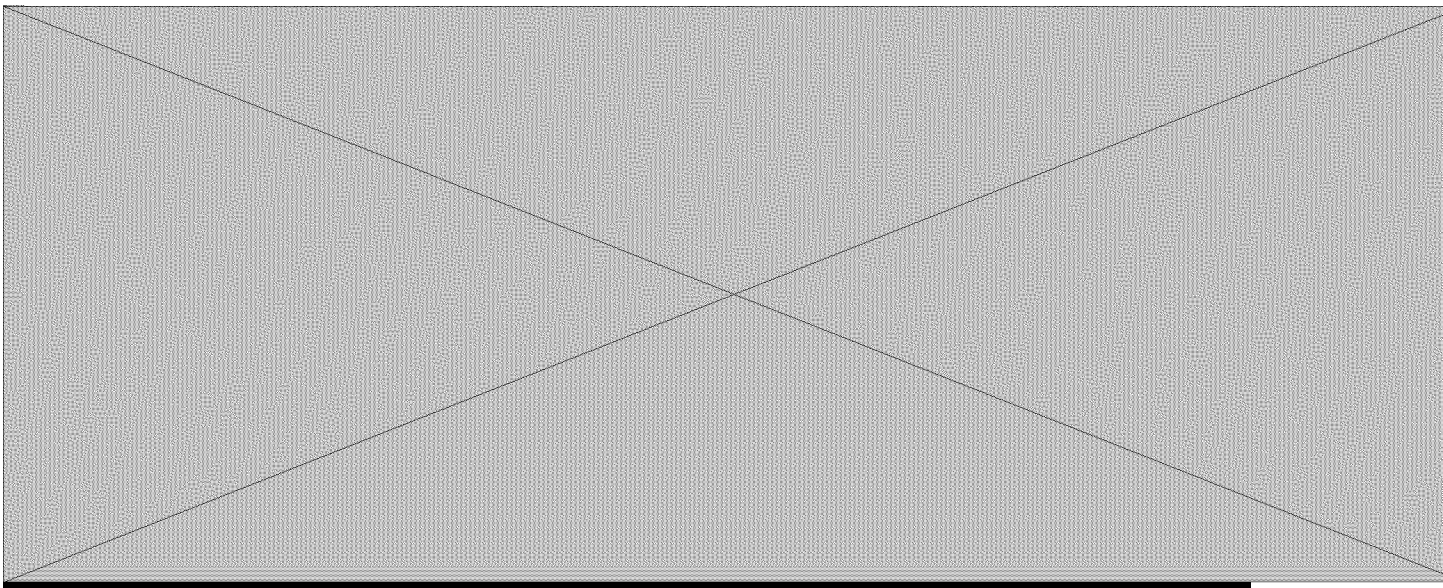
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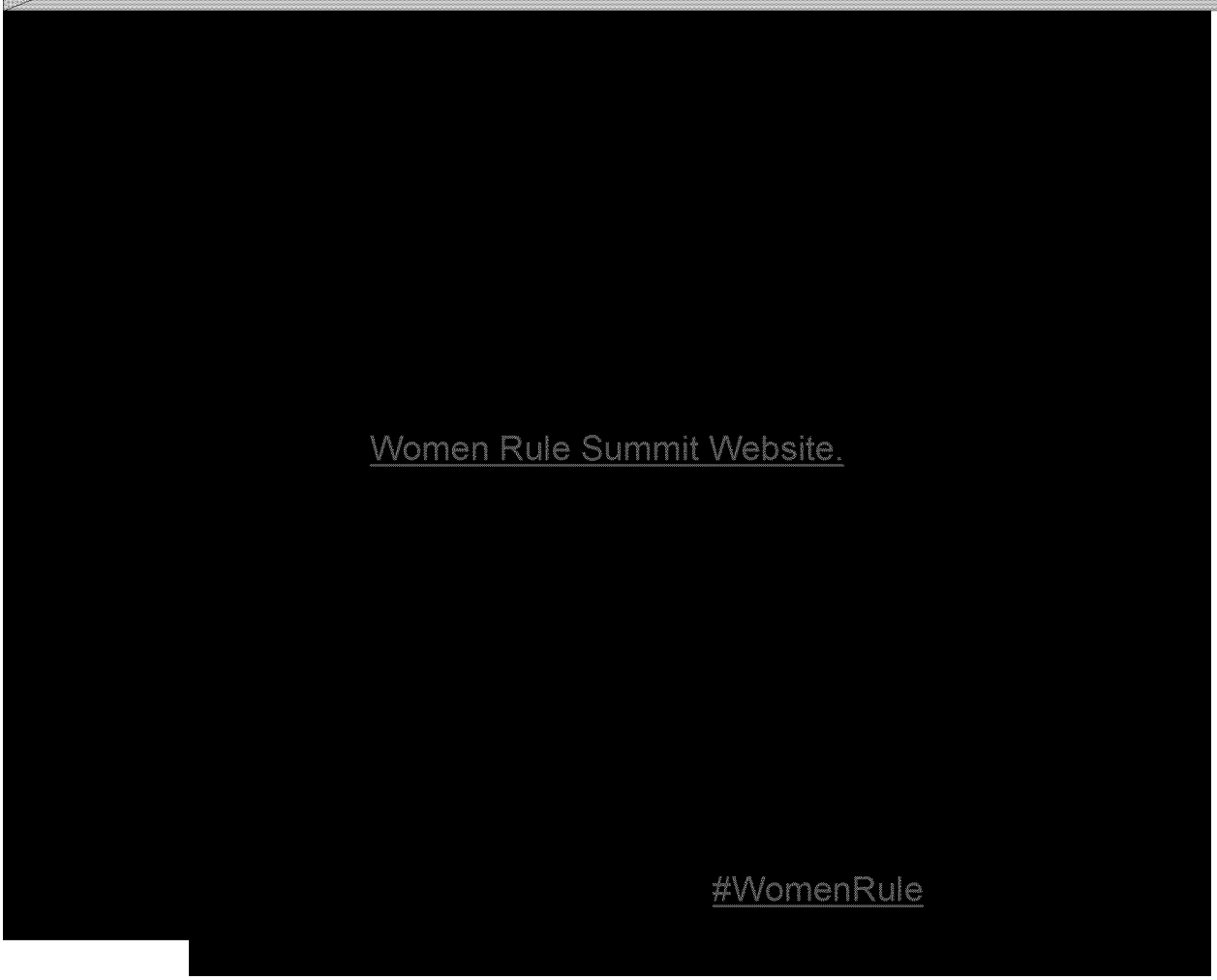
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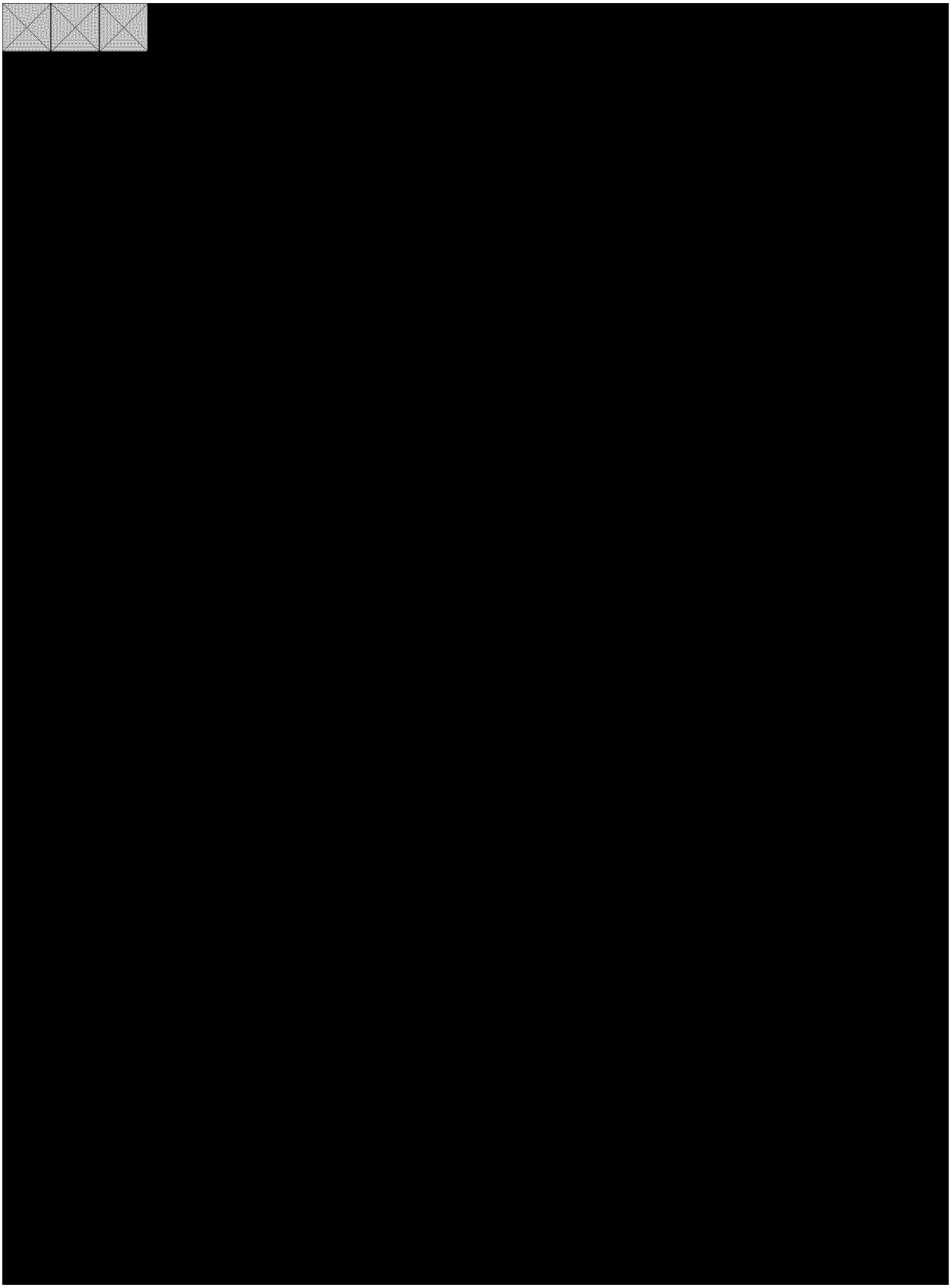
Thank you.

Frank Bernardo
926 Emerald Blvd
Southlake, TX 76092

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Women Rule
Sent: Tue 12/5/2017 1:25:22 PM
Subject: Watch LIVE | Women Rule Fifth Annual Summit







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2448 Main Street, Santa Monica, California, 90405

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This email was sent to dravis.samantha@epa.gov

Unsubscribe

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Robert Sharp
Sent: Tue 11/14/2017 4:31:46 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Robert Sharp
11376 SW 50TH
TOWANDA, KS 67144

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Paige Kester
Sent: Tue 10/31/2017 3:37:58 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Paige Kester
116 Londonberry Terrace
Southlake, TX 76092

From: Bolen, Brittany
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: AGA and NGVA Regulatory Reform Discussion Focusing on the Subpart W Reporting Rule and the PCB Rules
Start Date/Time: Fri 10/6/2017 2:00:00 PM
End Date/Time: Fri 10/6/2017 2:30:00 PM
AGA 05 15 2017 Comments on EPA Rule Review Docket EPA-HQ-OA-2017-0190.pdf
NGVA EPA Regulatory Review May 2017 Final.pdf

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Attendees:

Kathryn Clay, Allison Cunningham and Pamela Lacey

Request: The American Gas Association (AGA) and Natural Gas Vehicles of America (NGVA) would like to arrange a follow-up meeting with you to discuss our ideas for regulatory reform, as described in our attached comments, filed May 15, 2017 in Docket EPA-HQ-OA-2017. AGA's comments address several programs, but at this meeting, we will want to focus on revisions we have suggested to improve: (1) the Subpart W reporting rule and (2) the PCB rules.

Contact:
Pamela A. Lacey | Chief Regulatory Counsel
American Gas Association<http://www.aga.org>

400 N. Capitol St., NW | Washington, DC | 20001
P: 202-824-7340 | M: 202-809-6565 | F: 202-824-9190 | placey@aga.org
<mailto:placey@aga.org>

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Brian Dunkelberger
Sent: Tue 11/14/2017 2:36:05 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Brian Dunkelberger
531 Janvier Drive
Middletown, DE 19709

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Wossen Abebe
Sent: Tue 10/31/2017 3:37:09 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Wossen Abebe
2828 N Harwood
Dallas, TX 75201

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Kyle Cavins
Sent: Tue 10/31/2017 3:36:56 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Kyle Cavins
1731 S Canton Ave
Tulsa, OK 74112

To: Myron Ebell[Myron.Ebell@cei.org]
From: Myron Ebell
Sent: Mon 11/27/2017 2:31:45 PM
Subject: Cooler Heads Coalition next meeting and invitation to Hill briefing

The Cooler Heads Coalition will hold its December strategy meeting beginning at 12 noon on Monday, 4th December, at CEI, 1310 L Street, N. W., Seventh Floor. Please e-mail or ring me at 331-2256 with agenda items or questions.

Also, don't forget our Hill briefing on Tuesday, 28th December, at 4 PM in 2322 Rayburn. Our speaker is Rupert Darwall, author of the recently published Green Tyranny: Exposing the Totalitarian Roots of the Climate Industrial Complex, and in 2013 of the Age of Global Warming: a History. Copies of Green Tyranny will be provided to attendees compliments of CEI. Here's the invitation pasted below.

The Cooler Heads Coalition

invites you to

a talk

by

Rupert Darwall

Author of

Green Tyranny:

Exposing the Totalitarian Roots of the Climate Industrial Complex

(Published by Encounter Books in October)

Tuesday, November 28

4—5 PM

2322, Rayburn House Office Building

Complimentary copies of Green Tyranny will be provided by CEI.

Mr. Darwall will be available to sign copies of his book after his talk.

This Congressional staff and media briefing is a widely-attended event.

Please RSVP to Myron Ebell at mebell@cei.org.

Myron Ebell

Director, Center for Energy and Environment

Competitive Enterprise Institute

1310 L Street, N. W., Seventh Floor

Washington, DC 20005, USA

Tel direct: (202) 331-2256

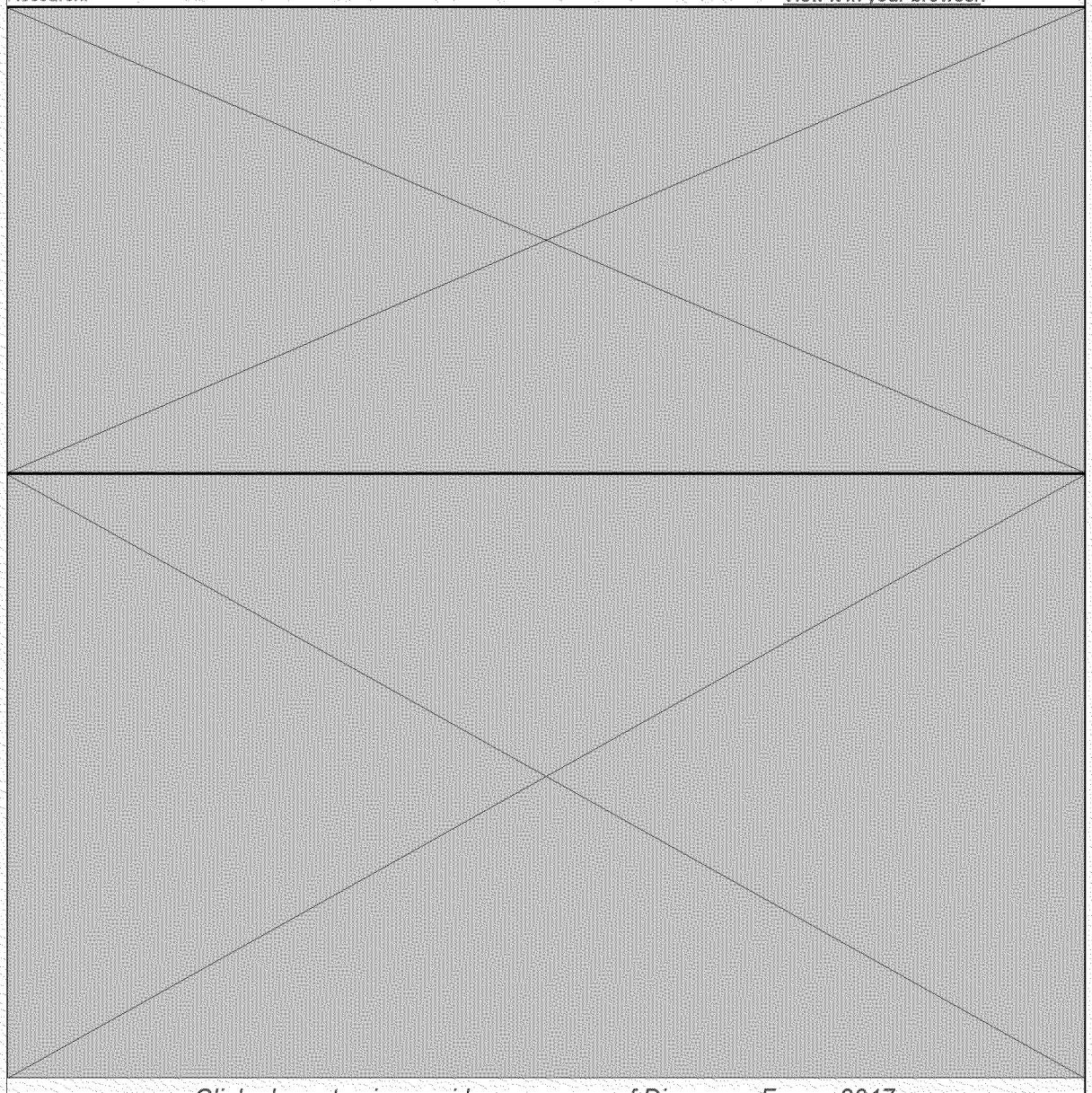
Tel mobile: (202) 320-6685

E-mail: Myron.Ebell@cei.org

Stop continental drift!

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Solve ME/CFS Initiative
Sent: Sat 10/21/2017 12:47:47 AM
Subject: Research 1st | October | SPECIAL ISSUE: Research Forum #DISCOVERMECFS17

Research 1st October 2017: Reporting out from Discovery Forum 2017: A New Era in ME/CFS Research. Email not displaying correctly? **View it in your browser.**



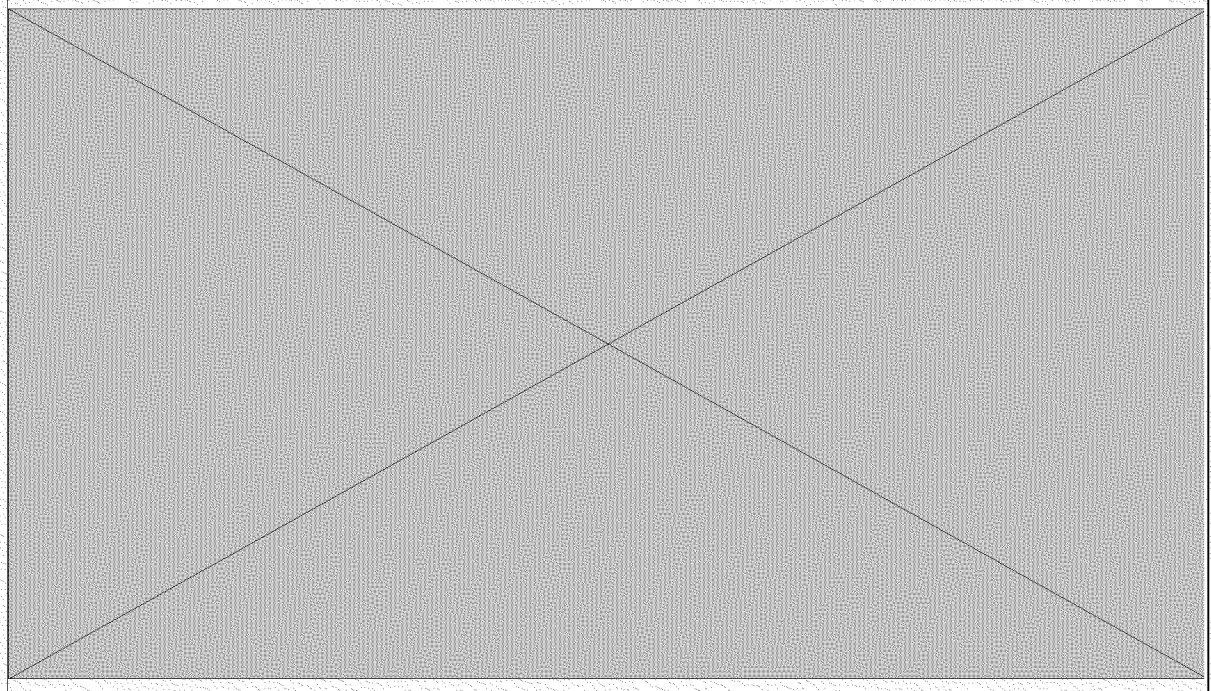
Click above to view a video summary of Discovery Forum 2017

Dear Friends,

On Saturday, October 14th, we held our annual Discovery Forum in Washington, DC. The forum, now in its second year, brought together leaders with affiliations in academia, biotech, government, research, and clinical settings. The driving concept of the forum was to disrupt to the status quo, bring novel perspective of value to the field, and catalyze cross-functional collaboration… We present this special issue of Research 1st to inform our community about this event. **READ MORE**

Yours,

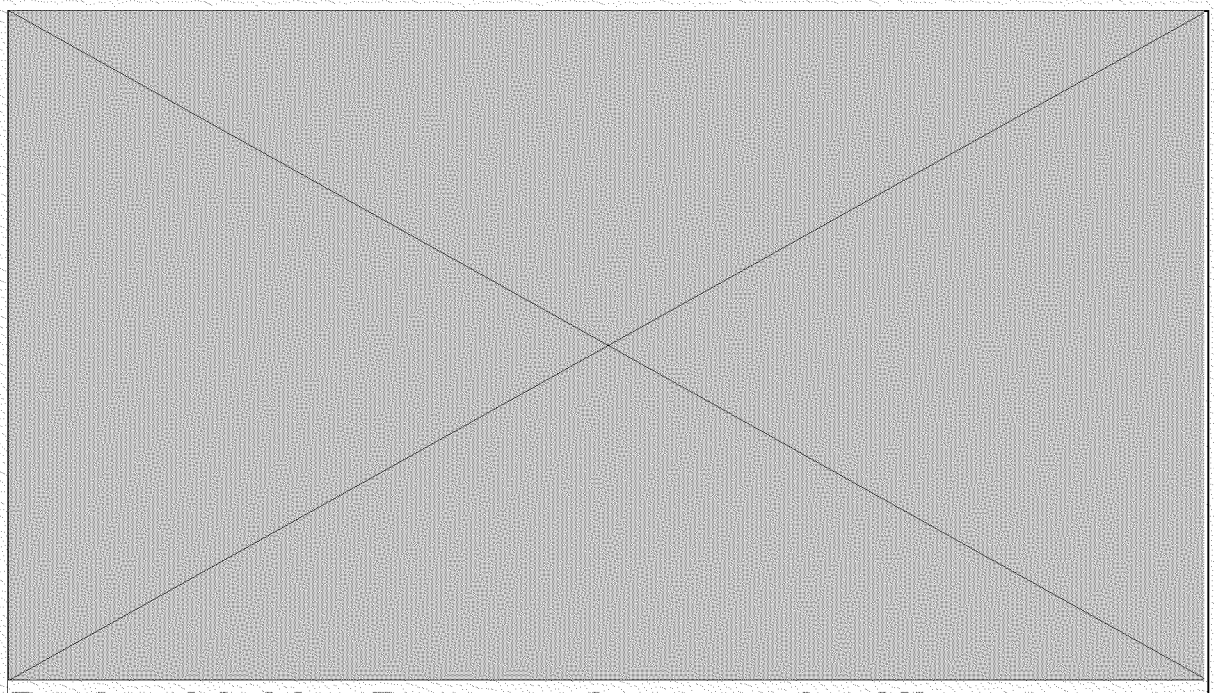
Zaher Nahle PhD, MPA
Chief Scientific Officer and Vice President for Research



Presenters of Discovery Forum 2017 (from left to right): Carol Head, SMCI; Dr. Peter Rowe, Johns Hopkins; Dr. Vicky Whittemore, NIH; Dr. Susan Levine, Former CFSAC Chair; Dr. Ken Blount, Rebiotix; Dr. Charles Lapp, Hunter-Hopkins Center; Dr. Becky McNeil ***(Dr. Rick Williams not pictured)****, RTI International; Dr. Nancy Klimas, Nova University; Dr. Dan Peterson, Sierra Internal Medicine; Dr. Elizabeth Unger, CDC; Dr. Zaher Nahle, SMCI; Dr. Ralph Garippa, MSKCC; Dr. Cindy Bateman, Bateman Horne Center; Dr. Ian Lipkin, Columbia University; Dr. Maureen Hanson, Cornell Universty; and Dr. Derya Unutmaz, Jackson Laboratory.*

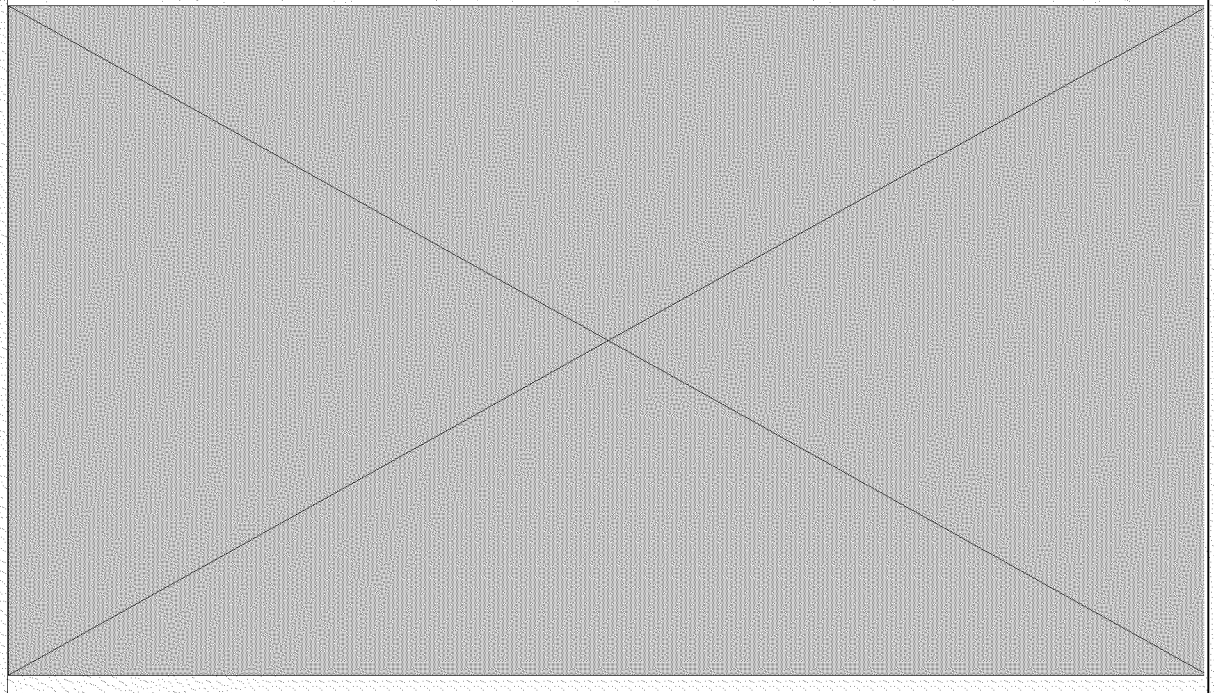
Full Presentation report from Discovery Forum 2017

The Solve ME/CFS Initiative (SMCI) held its second annual Discovery Forum Saturday,f October 14, 2017. The forum dubbed “a new era in ME/CFS research” brought together leaders from academia, government agencies, private clinics, and biotech and research institutions to discuss developments in the field of Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) research. Read the full report of the 15 presentations from scientists, clinicians, and key strategists in ME/CFS… **READ MORE**



Dr. Ian Lipkin: Perspectives on the History, Status, and Future of ME/CFS

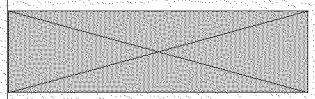
Dr. Ian Lipkin of Columbia University, and the primary investigator of the NIH Columbia Collaborative Research Center and one of the leading minds in the ME/CFS research space. Read his speech at Discovery Forum 2017. **READ MORE**



We need your support to keep us moving forward

Events like our *Discovery Forum* enable SMCI to convene the top clinicians, researchers, and leaders from federal health agencies to discuss important issues related to ME/CFS. To support our work to continue to connect disparate leaders, please visit SolveCFS.org/Donate. Your gift enables us to move forward toward making ME/CFS understood, diagnosable, and treatable. It's donations large and small from people just like you that make progress and events like this groundbreaking *Discovery Forum* possible.

Thank You!



The work of SMCI is entirely fueled by gifts large and small from people just like you.

Forward to a Friend Friend Us on Facebook Follow Us on Twitter

Unsubscribe

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Gregory Tutak
Sent: Tue 10/31/2017 3:36:38 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Gregory Tutak
1219 S 15th St
Artesia, NM 88210

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Jessica Simer
Sent: Tue 10/31/2017 3:36:23 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Jessica Simer
3311 W Richey
Artesia, NM 88210

From: Jennifer Gibson
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: Meeting with the Agricultural Retailers Association: General Duty Clause [CAA Section 112(r)(1)]
Start Date/Time: Tue 9/26/2017 6:30:00 PM
End Date/Time: Tue 9/26/2017 7:00:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Matthew Roush
Sent: Tue 10/31/2017 3:34:37 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Matthew Roush
3232 S Ravinia Dr
Dallas, TX 75233

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: National Geographic
Sent: Thur 10/5/2017 3:10:00 PM
Subject: Reminder to RSVP: Ocean Conservation Forum

October 18: National Geographic Forum on Ocean Conservation

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Please join National Geographic Society President and CEO **Gary E. Knell** for a conversation around the critical global issue of ocean conservation. The forum will feature **Dr.** —National Geographic Society Explorer-in-Residence and leader of the Pristine Seas project—and Co-Chair of the bipartisan Senate Oceans Caucus **Senator Sheldon Whitehouse** of Rhode Island.

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.

From: Lorraine Gershman
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: Meeting with the Agricultural Retailers Association: General Duty Clause [CAA Section 112(r)(1)]
Start Date/Time: Tue 9/26/2017 6:30:00 PM
End Date/Time: Tue 9/26/2017 7:00:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Broan Powell
Sent: Fri 10/20/2017 8:55:44 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Broan Powell
404 Coventry Lane
Glenn Mills, PA 19342

From: Richard Gupton
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: Meeting with the Agricultural Retailers Association: General Duty Clause [CAA Section 112(r)(1)]
Start Date/Time: Tue 9/26/2017 6:30:00 PM
End Date/Time: Tue 9/26/2017 7:00:00 PM

;

To: Jacqueline V. Norris[keanjagreen@gmail.com]; Tejada, Matthew[Tejada.Matthew@epa.gov]
Cc: Dravis, Samantha[dravis.samantha@epa.gov]; jacinorris_eja@hotmail.com[jacinorris_EJA@hotmail.com]
From: Wallace, Maria
Sent: Thur 10/12/2017 2:38:01 PM
Subject: RE: Reorganization OEJ/OECA in EPA Office of Policy

Good Morning,

I've spoken with Rev. Norris as requested and she's determined that additional information is essential for her to a beneficial dialogue. She appreciated the offer to have a discussion…

Maria A. Wallace

Executive Assistant (SEE)

US EPA / Office of Environmental Justice (OEJ)

William Jefferson Clinton South, 2226E, MC 2201A

1200 Pennsylvania Ave., NW, Washington, DC 20004

Telephone: 202-564-2924

Try to be a rainbow in someone's cloud… Maya Angelou

I can't change the direction of the wind, but I can adjust my sails to always reach my destination.

From: Jacqueline V. Norris [mailto:keanjagreen@gmail.com]
Sent: Wednesday, October 11, 2017 3:25 PM
To: Tejada, Matthew <Tejada.Matthew@epa.gov>
Cc: Dravis, Samantha <dravis.samantha@epa.gov>; jacinorris_eja@hotmail.com; Wallace, Maria <wallace.maria@epa.gov>
Subject: Re: Reorganization OEJ/OECA in EPA Office of Policy

Hi Matthew,

Let me know what you are thinking/or unsure about in writing especially as it relates to the new Draft FY 2018-2022) EPA Strategic Plan (Public Review Draft). You might want to start (how Policy/OEJ/OECA) will work as a unified team on --EPA's Mission: To Protect Human Health and the Environment (Goals 1-3).

How might this be worked out with headquarters and regions in that the regions (all) are working in communities and each has a different need to the goals.

Thanks for a quick reply and hope this helps!

Rev. Jacqueline V. Norris [Jaci]

Management Consultant

KeAnJa Prince George's Environmental Social Justice

Marginalized Community Collaborative/Graduate EPA's

Environmental Justice Academy/Certified Environmental Justice Academy Train-the-Trainer/EPA's Office of Environmental Justice & Sustainability partnership with Atlanta Metropolitan State College & Underserved Partnership Program

(240) 351.0983 (Cell)

On Wed, Oct 11, 2017 at 2:51 PM, Tejada, Matthew <Tejada.Matthew@epa.gov> wrote:

Hello Jaci

I'd be happy to hop on the phone with you in the next week or two to discuss your interests described below to see how we can best engage your request.

Maria, will you please find a time in the next two weeks for me and Jaci to chat.

Best,

Matthew

Matthew Tejada

Director - Office of Environmental Justice

Environmental Protection Agency

202-564-8047

From: Jacqueline V. Norris [mailto:keanjagreen@gmail.com]
Sent: Wednesday, October 11, 2017 2:40 PM
To: Dravis, Samantha <dravis.samantha@epa.gov>; Tejada, Matthew <Tejada.Matthew@epa.gov>; jacinorris_eja@hotmail.com
Subject: Reorganization OEJ/OECA in EPA Office of Policy

Good Afternoon,

You had mentioned Office of Environmental Justice has now moved within the Office of Policy. As a faith-based ordained leader, I would like to discuss with other faith-based leaders, such as headquarters, regional offices, private entities, NEJAC/or the Federal Inter-Agency Environmental Justice Work Group has worked collaboratively on the below initiatives from September 2016 to present. This includes giving a brief outline how EPA and Inter-Agency Work Group will collaborate in the future from a "rule of law" or policy perspective being implemented/or modified?

Please provide case studies already funded/or ended in the last year.

Civil rights and environmental justice compliance plan

Applies to recipients of federal funding, public and private

1. Describe what do you plan to do

2. Analyze benefits and burdens on all people

Statistical and anecdotal evidence

GIS mapping and demographics

Define standards to measure progress and hold officials accountable

3. Analyze alternatives

4. Include people of color and low-income people

5. Implement a plan to distribute benefits and burdens fairly and avoid discrimination: both intentional discrimination, and unjustified discriminatory impacts.

Cordially,

Rev. Jacqueline V. Norris [Jaci]

Management Consultant

KeAnJa Prince George's Environmental Social Justice

Marginalized Community Collaborative/Graduate EPA's

Environmental Justice Academy/Certified Environmental
Justice Academy Train-the-Trainer/EPA's Office of Environmental Justice &
Sustainability partnership with Atlanta Metropolitan State College
& Underserved Partnership Program

(240) 351.0983 (Cell)

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Women Rule
Sent: Mon 12/4/2017 8:42:03 PM
Subject: Join Us | Women Rule Fifth Annual Summit Livestream

Thank you for your interest in Women Rule.

We have an exciting day of programming and we would love if you joined us LIVE **tomorrow**
by tuning in throughout the day to our livestream.

The full Summit agenda can be found at politico.com/summitagenda .

Make sure to check out that page for the most updated speakers, panels and timing.

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This email was sent to dravis.samantha@epa.gov

Unsubscribe

To: Myron Ebell[Myron.Ebell@cei.org]
From: Myron Ebell
Sent: Mon 11/20/2017 11:10:08 PM
Subject: Cooler Heads Coalition invitation to talks by Rupert Darwall, author of Green Tyranny

Our friend Rupert Darwall will be in town next week to promote his new book, Green Tyranny: Exposing the Totalitarian Roots of the Climate Industrial Complex, which was published by Encounter in October.

Here are three events, all on Tuesday, 28th November:

1. The Cooler Heads Coalition will hold a Hill briefing on Tuesday the 28th from 4 to 5 PM in 2322 Rayburn. Complimentary copies of Rupert's book will be available for signing. Details below. Please Rsvp to me by return e-mail.

2. Heritage will hold an event at 12 noon on the 28th. Details and Rsvp here: http://www.heritage.org/environment/event/green-tyranny-exposing-the-totalitarian-roots-the-climate-industrial-complex

3. CEI will host an informal reception for Rupert from 5:30 to 7 PM on the 28th. Please e-mail me for details of that event. Complimentary copies of Rupert's book will be available for signing.

The Cooler Heads Coalition

invites you to

a talk

by

Rupert Darwall

Author of

Green Tyranny:

Exposing the Totalitarian Roots of the Climate Industrial Complex

(Published by Encounter Books in October)

Tuesday, November 28

4—5 PM

2322, Rayburn House Office Building

Complimentary copies of Green Tyranny will be provided by CEI.

Mr. Darwall will be available to sign copies of his book after his talk.

This Congressional staff and media briefing is a widely-attended event.

Please RSVP to Myron Ebell at mebell@cei.org.

Myron Ebell

Director, Center for Energy and Environment

Competitive Enterprise Institute

1310 L Street, N. W., Seventh Floor

Washington, DC 20005, USA

Tel direct: (202) 331-2256

Tel mobile: (202) 320-6685

E-mail: Myron.Ebell@cei.org

Stop continental drift!

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: virtualizationwebinars
Sent: Mon 11/20/2017 10:54:07 PM
Subject: Free CISSP Exam Prep - 100k security job openings

Want to pass the CISSP exam the first time and fast-track your cybersecurity career? There were over 102,000 job openings requiring a CISSP certification in 2016 and the demand is projected by 18% annually.

MCI is offering a free, online CISSP Exam Prep Course for new students enrolled in the Baker College Online Cloud Security Risk Management MBA or MSIS program.

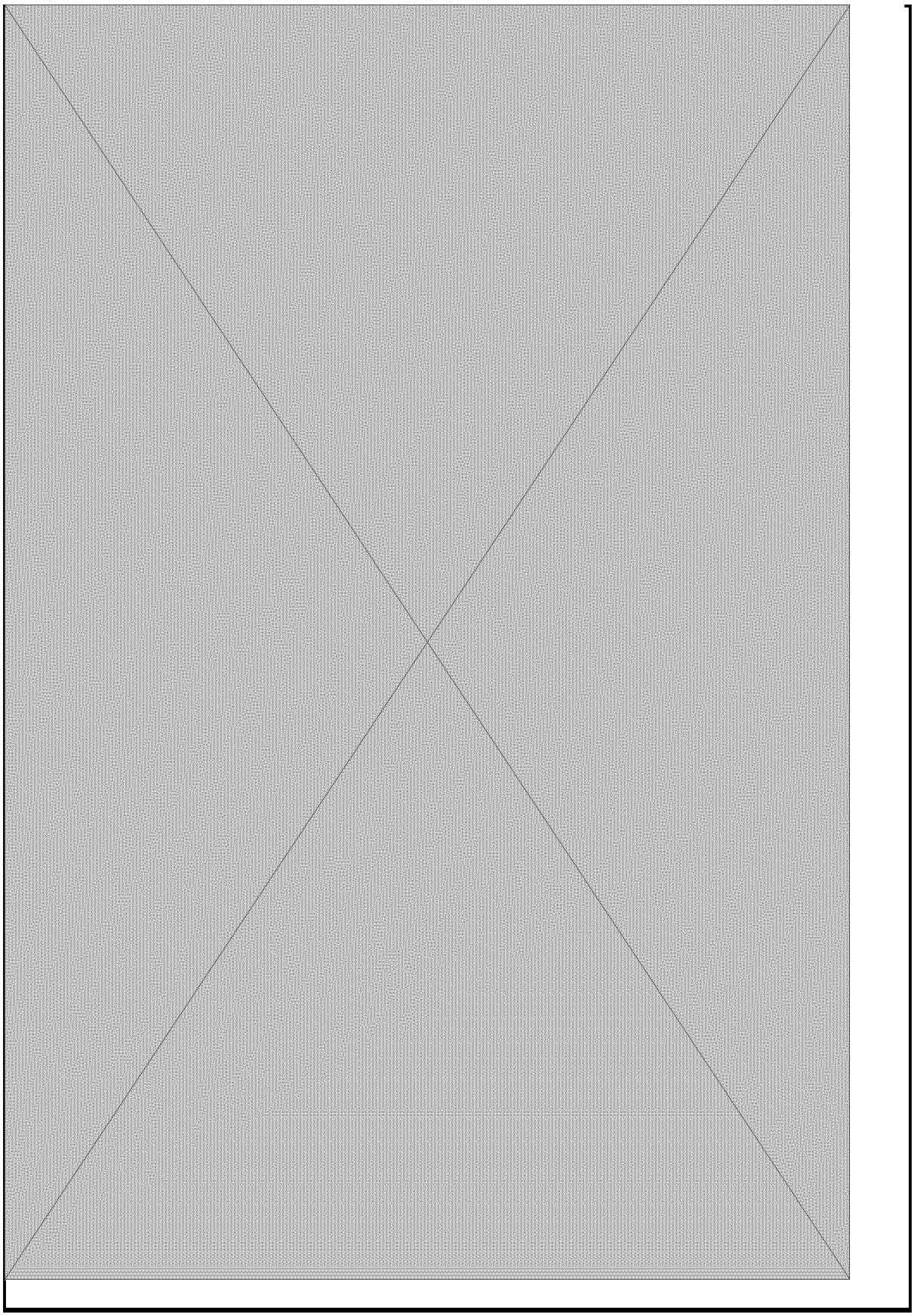
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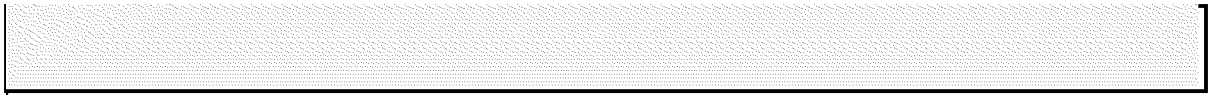
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From: Billy Johnson
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: To be rescheduled: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/4/2017 5:30:00 PM
End Date/Time: Wed 10/4/2017 6:00:00 PM

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: CSIS External Relations
Sent: Wed 10/4/2017 5:10:28 PM
Subject: Out Today: “Overload” from Bob Schieffer and H. Andrew Schwartz





From: Crozer, William
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: To be rescheduled: Meeting with ISRI Members to Discuss RCRA Regulatory Reform
Start Date/Time: Wed 10/4/2017 5:30:00 PM
End Date/Time: Wed 10/4/2017 6:00:00 PM

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Robert Courtney
Sent: Mon 11/13/2017 6:43:17 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Robert Courtney
114 W Tomlin Station Rd
Mickleton, NJ 08056

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Harry Moore
Sent: Thur 11/9/2017 12:54:11 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Harry Moore
2815 e ave
Levittown, PA 19056

To: Tejada, Matthew[Tejada.Matthew@epa.gov]; Dravis, Samantha[dravis.samantha@epa.gov]
From: Jacqueline V. Norris
Sent: Thur 11/2/2017 11:53:41 AM
Subject: Re: Reorganization OEJ/OECA in EPA Office of Policy

oops,

The most important question is the one below:

1) Is there a designated office responsible for conducting an environmental justice review of programs, policies, and activities/or if so what office?

Rev. Jacqueline V. Norris [Jaci]
Social Engineer Consultant
KeAnJa Prince George's Environmental Social Justice Marginalized Community Collaborative/Graduate EPA's Environmental Justice Academy/Certified EJ Academy Train-the-Trainer/Region IV Office EJ & Sustainability in partnership/Atlanta Metropolitan State College & Underserved Partnership Program
(240) 351.0983 (Cell)

On Thu, Nov 2, 2017 at 7:23 AM, Jacqueline V. Norris <keanjagreen@gmail.com> wrote:

> Thanks for your quick response on yesterday. My thoughts last night had me to wonder about whether OEJ will still collaborate with OECA on how each section will conduct environmental justice reviews of its health and environmental mission/or goal programs, policies, and activities. Thus, I have the following questions/or thoughts:
>
> - How/or will OEJ/OECA utilize EPA Strategic Plan 2018-2020 as it guidance to identify activities, initiatives, and/or strategies that address the integration of environmental justice (stewardship) and incorporate them (new progressive initiatives) into the National Program Managers' planning and budgeting documents and program agreements?
>
> - If my memory/or analogy is correct, OEJ appears to have an "ex officio" association/or membership on the Agency's Steering Committee. An Agency Steering Committee, body, that oversees regulatory policy for the Agency/or the development of its rules. Therefore, will both offices, OEJ/OECA still be a part of this body/or has this role been eliminated?

- What will be the roll of EPA to continue the "Fundamentals of Environmental Justice training from headquarters/or throughout the regions?

Cordially,

Rev. Jacqueline V. Norris [Jaci]
Social Engineer Consultant
KeAnJa Prince George's Environmental Social Justice Marginalized Community Collaborative/Graduate EPA's Environmental Justice Academy/Certified EJ Academy Train-the-Trainer/Region IV Office EJ & Sustainability in partnership/Atlanta Metropolitan State College & Underserved Partnership Program
(240) 351.0983 (Cell)

On Wed, Nov 1, 2017 at 3:23 PM, Tejada, Matthew <Tejada.Matthew@epa.gov> wrote:

> Thanks Jacqueline for sharing those thoughts. And yes, we absolutely will continue to play this same role, just from a different place within the Agency that is arguably in a much better position to support our cross Agency integration of environmental justice tools and concerns.
>
> Matthew Tejada
>
> Director - Office of Environmental Justice
>
> Environmental Protection Agency
>
> 202-564-8047
>
> **From:** Jacqueline V. Norris [mailto:keanjagreen@gmail.com]
> **Sent:** Wednesday, November 01, 2017 12:34 PM
> **To:** Dravis, Samantha <dravis.samantha@epa.gov>; Tejada, Matthew <Tejada.Matthew@epa.gov>; jacinorris_eja@hotmail.com
> **Subject:** Re: Reorganization OEJ/OECA in EPA Office of Policy

Hello Everyone,

I had some time to review and reflect on historical notes (2006 to Present) emergence of OEJ under the office of OECA. It appears OECA created "Environmental Justice Strategic Enforcement Screening Tool (EJSEAT) to serve as "a consistent methodology that would enable to OECA to identify communities or areas experiencing disproportionate environmental and public health burdens for the purposes of enhancing focusing OECA's enforcement and compliance activities in those areas."

For example, things have emerged and the offices OEJ/OECA are now separate under Policy. Will it still be the intent of both offices to improve consistency in EPA EPA's environmental stewardship (justice) programs that are moving towards having States initiate environmental stewardship (justice) regulations by partnering with EPA/EJIWG, and Environmental Council of States, which is a 501c(4).

These are just some questions as it relates to the role out the two sections, OEJ/OECA, which is now within the Office Policy, which seems more to design policy and regulatory initiatives with states nationally.

These are just my thoughts as you move out to meet with environmental communities before the end of the year.

Rev. Jacqueline V. Norris [Jaci]

Social Engineer Consultant

KeAnJa Prince George's Environmental Social Justice

Marginalized Community Collaborative/Graduate EPA's

Environmental Justice Academy/Certified EJ Academy Train-the-Trainer/Region IV Office EJ

& Sustainability in partnership/Atlanta Metropolitan

State College & Underserved Partnership Program

(240) 351.0983 (Cell)

On Wed, Oct 11, 2017 at 2:39 PM, Jacqueline V. Norris <keanjagreen@gmail.com> wrote:

Good Afternoon,

You had mentioned Office of Environmental Justice has now moved within the Office of Policy. As a faith-based ordained leader, I would like to discuss with other faith-based leaders, such as headquarters, regional offices, private entities, NEJAC/or the Federal Inter-Agency Environmental Justice Work Group has worked collaboratively on the below initiatives from September 2016 to present. This includes giving a brief outline how EPA and Inter-Agency Work Group will collaborate in the future from a "rule of law" or policy perspective being implemented/or modified?

Please provide case studies already funded/or ended in the last year.

Civil rights and environmental justice compliance plan

Applies to recipients of federal funding, public and private

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Define standards to measure progress and hold officials accountable

3. Analyze alternatives

4. Include people of color and low-income people

5. Implement a plan to distribute benefits and burdens fairly and avoid discrimination: both intentional discrimination, and unjustified discriminatory impacts.

Cordially,

Rev. Jacqueline V. Norris [Jaci]

Management Consultant

KeAnJa Prince George's Environmental Social Justice

Marginalized Community Collaborative/Graduate EPA's

Environmental Justice Academy/Certified Environmental Justice Academy Train-the-Trainer/EPA's Office of Environmental Justice & Sustainability partnership with Atlanta Metropolitan State College & Underserved Partnership Program

(240) 351.0983 (Cell)

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Thomas Mefford
Sent: Thur 11/2/2017 11:34:37 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Thomas Mefford
2620 Overcrest Lane
Sapulpa, OK 74066

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Troy McLaughlin
Sent: Mon 11/13/2017 5:23:26 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Troy McLaughlin
1110 McCollum Rd,
El Dorado, KS 67042

To: Diamant, Adam[ADiamant@epri.com]
From: Diamant, Adam
Sent: Mon 11/13/2017 8:47:53 PM
Subject: Presentations from EPRI Fuels and Planning Seminar (Nov 8-9, 2017) (Part 2 of 2)
S7_Bistline_EPRI_FlexOps_2017 EPRI Seminar_110817.pdf
S8a_McMurry_Duke IRP_2017 EPRI Seminar_110817.pdf
S8b_Hedrick_SCE IRP_2017 EPRI Seminar_110817.pdf
S9_Jereza_DOE_Grid NOPR_2017 EPRI Seminar_110917.pdf
S10_Helm_PJM_Reliability Attributes_2017 EPRI Seminar_110917.pdf
S11_Bandera_MISO_2017 EPRI Seminar_110917.pdf

[Part 2 of 2]

Dear EPRI Seminar Speakers and Participants,

Thank you all for joining us last week for the **36th Annual EPRI Seminar on Fuels, Power Markets and Resource Planning**. We hope you enjoyed the seminar and found the presentations and discussion to be interesting and provocative.

Attached you'll find PDF copies of the speaker presentations. Because of the size of these presentations and the limitations on some of your email systems, I'm sending this out in two separate emails with half the presentations attached to each email.

If you have any questions or feedback about this year's seminar, please contact me.
Best regards,
Adam

Adam Diamant
Technical Executive
Electric Power Research Institute (EPRI)
Manager, Market Analysis and Integrated Portfolio Planning (P178b)
510-260-9105
adiamant@epri.com

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Economic Value of Fossil Fleet Operational Flexibility

Modeling and Insights in US-REGEN



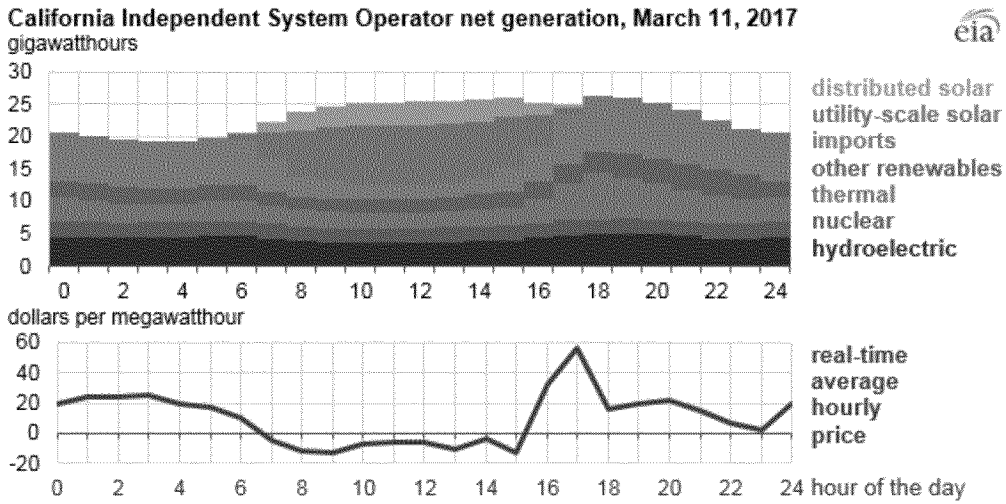
John Bistline, Ph.D.
Senior Technical Leader

36th Annual Fuels Seminar – Washington, DC
November 8, 2017

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Motivations: Low Gas Prices, High Renewables, and Flexibility

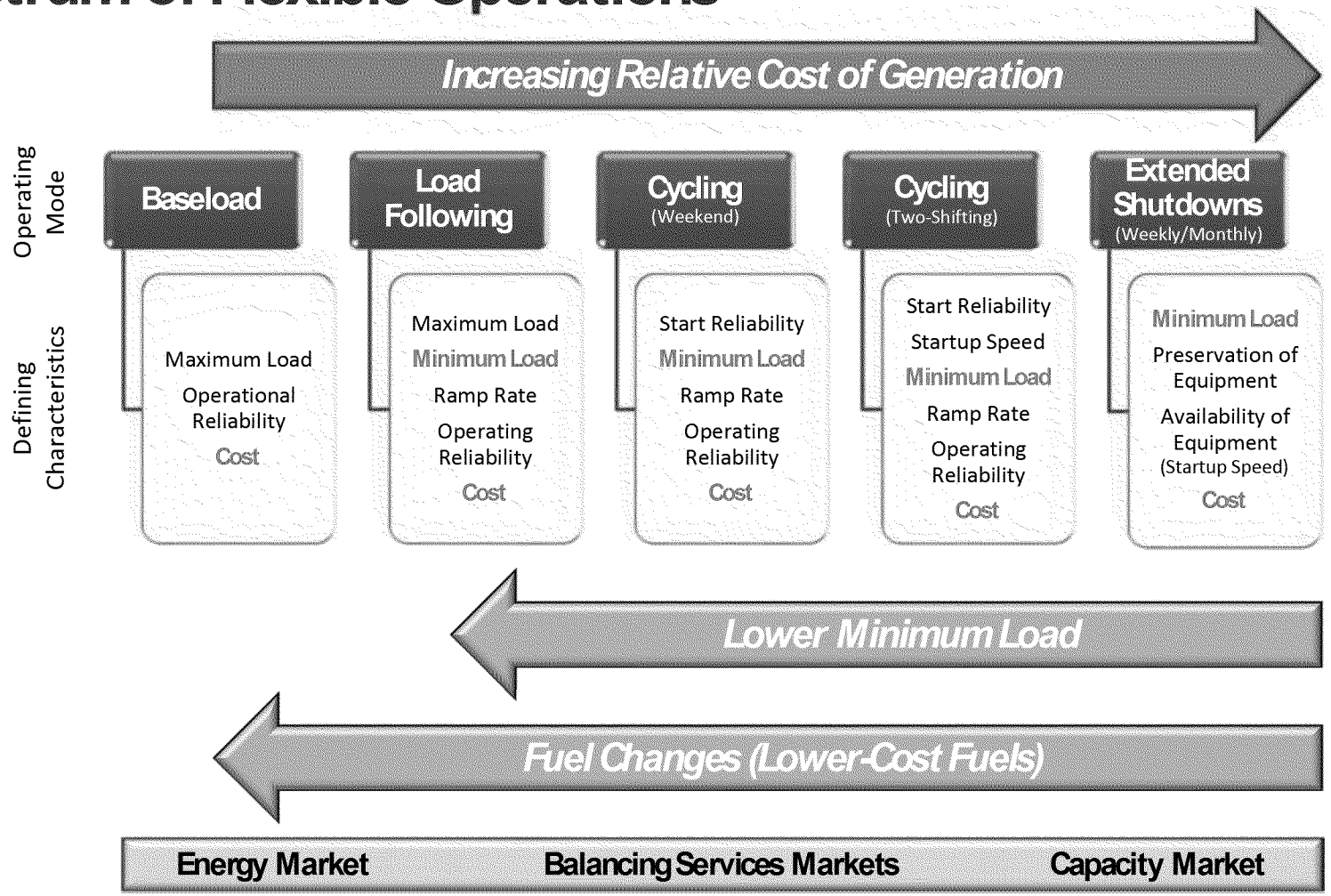
- Value of dispatchable assets on the grid grows as the share of non-dispatchable resources increases
- Value prospects of minimum load operations for flexible generators
  - Avoid negative operating margins
  - Provide grid services (e.g., reserves)
  - Avoid frequent startups



This analysis focuses on the economics of individual asset flexibility instead of system flexibility

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Spectrum of Flexible Operations



Externalities significantly impact costs and operations includes fuel prices, changing regulations

Credit: Mike Caravaggio

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Research Questions: Economics of Flexible Operations

- How can enhanced operational flexibility (in this analysis, **lower minimum loads**) for coal and gas assets impact operations and profitability under large-scale renewable deployment?
- How does the economic value of this flexibility vary across different regions, asset types, and market environments (e.g., level of renewable deployment)?

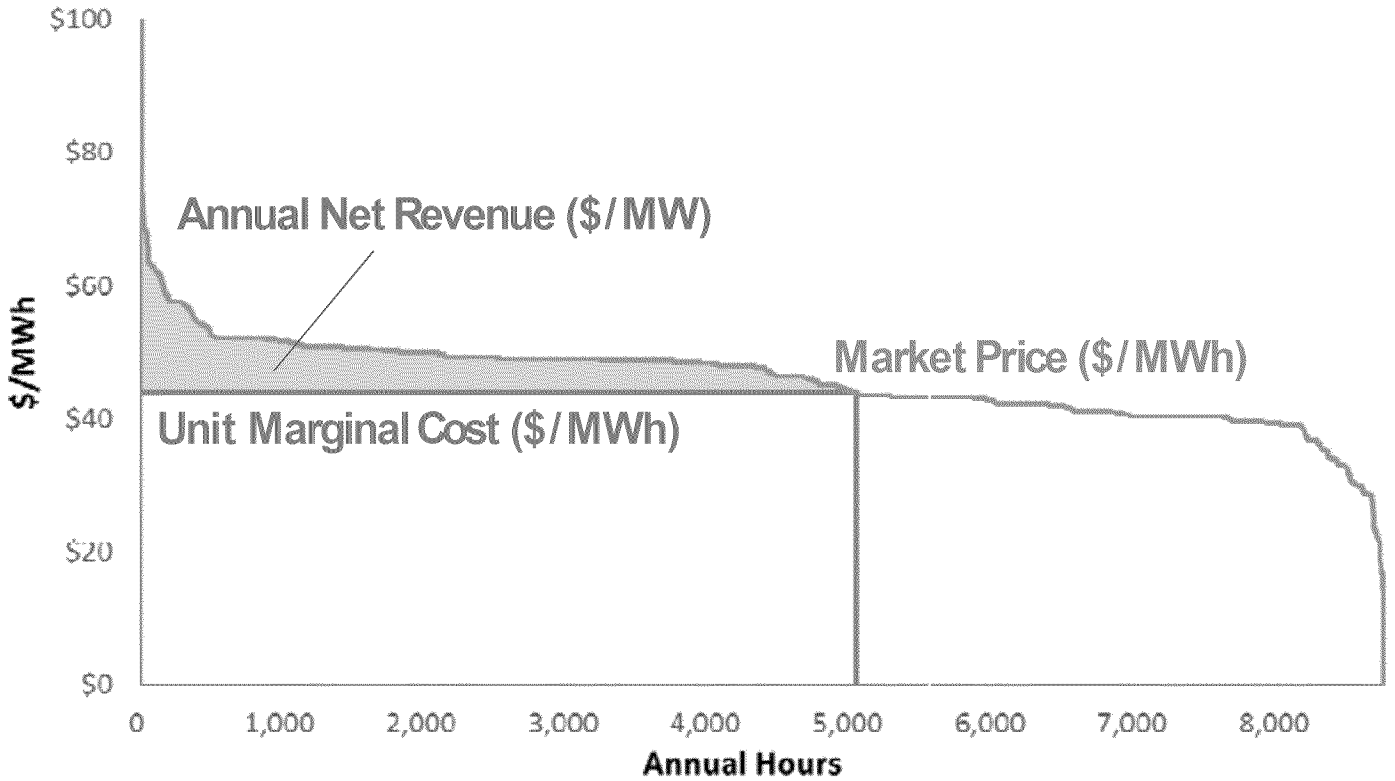
Goal is to evaluate the economic impact of improving technical parameters like minimum load to increase flexibility

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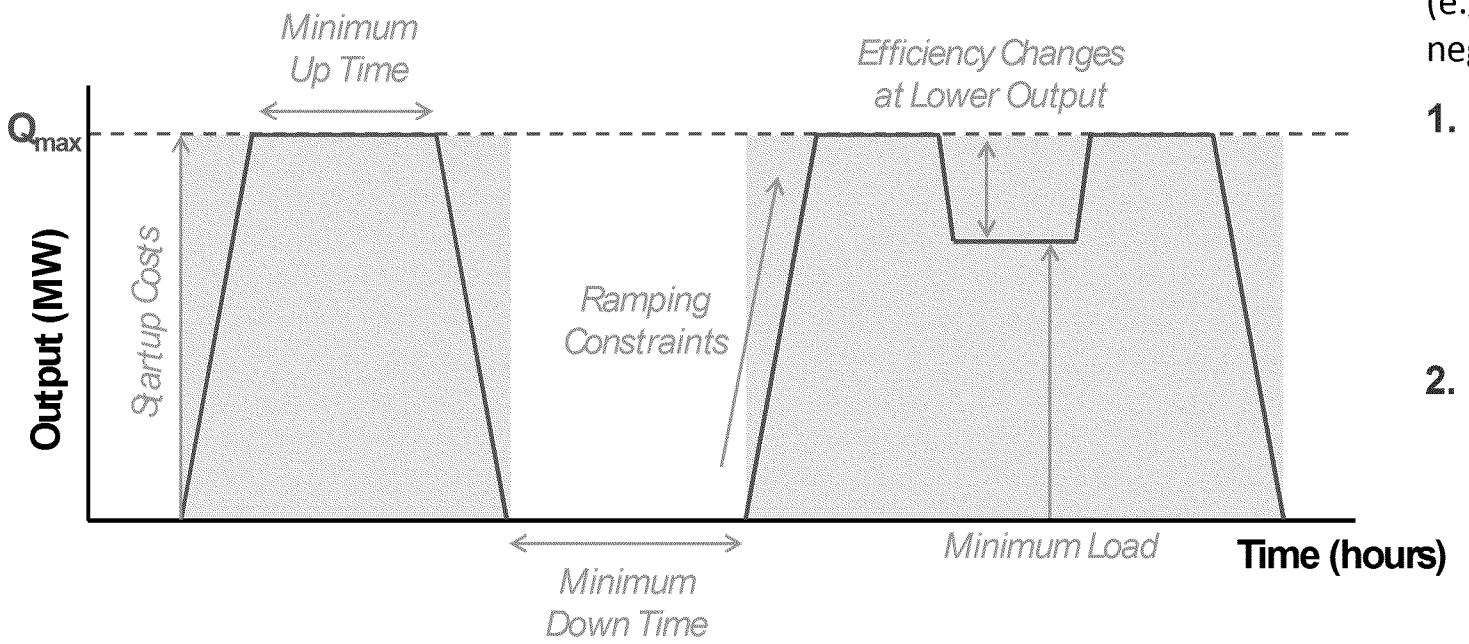
Price Duration Curves Drive Net Revenues for Power Plants

Example without Commitment Costs and Constraints



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Impacts of Commitment Costs and Constraints



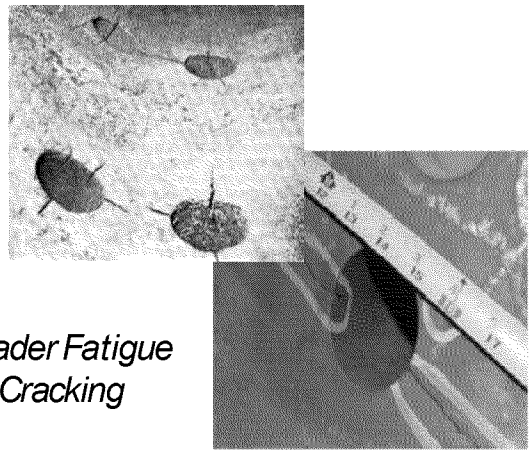
When operating margins for plants (e.g., spark spreads for gas units) turn negative, a plant can:

1. **Ramp down:** Stay online at minimum stable capacity, which forces the unit to absorb losses for generation but avoids shutdown and startup costs
2. **Shut down:** Turn off entirely, which avoids operating at a loss but with additional costs

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Turn Down for What? Physical Impacts of Flexible Operations

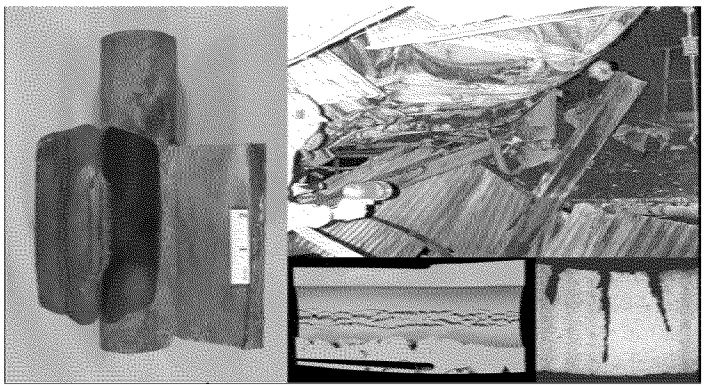
Thermal Fatigue Damage



Header Fatigue Cracking

- Predominate failure mode in boiler/turbine components subject to: frequent starts, fast ramping, etc.
- Caused by temperature mismatches between steam and metal surfaces

Corrosion Fatigue



Tube Failures

- On drum units, corrosion fatigue has been observed on riser tubes
- Involves combination of: manufacturing-induced bend stress, water chemistry fluctuations, etc.

Steam Turbine Impacts



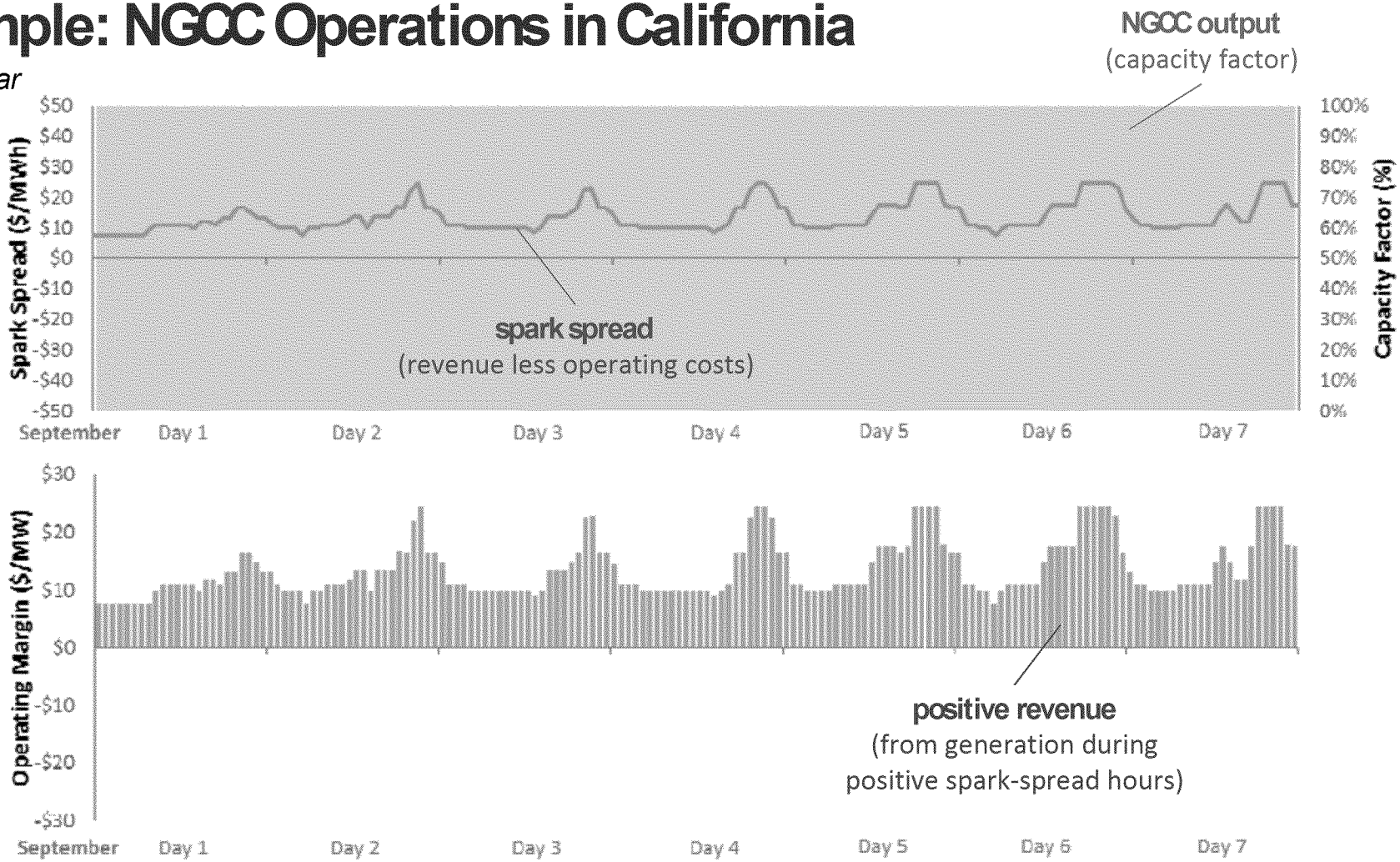
Steam Chemistry: Offline Pitting

- Reliability areas impacted: differential growth, thermal and speed cycling, creep fatigue, steam chemistry effects, erosion and corrosion, low-load impacts on blade flutter

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Example: NGCC Operations in California

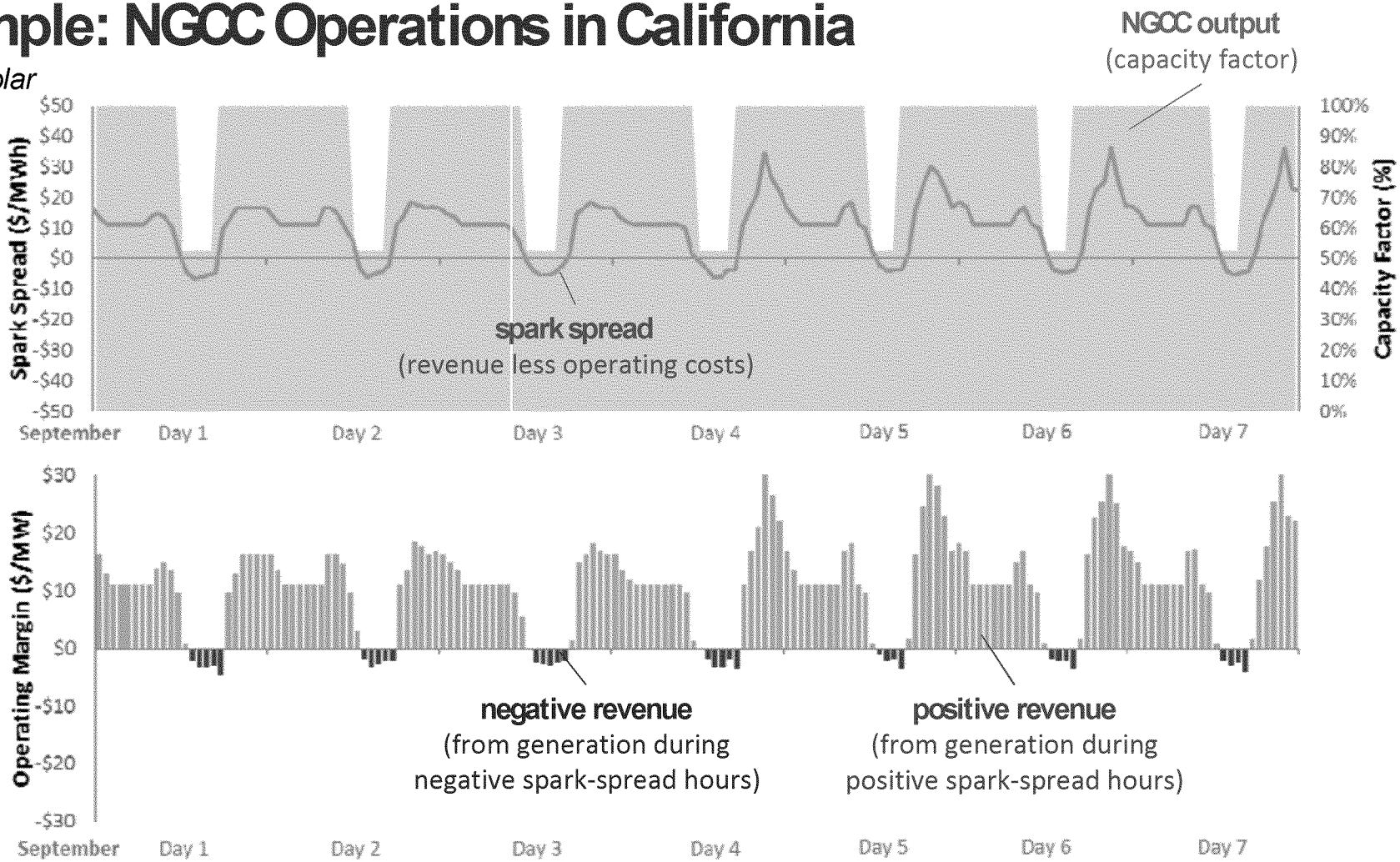
0 GW Solar



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Example: NGCC Operations in California

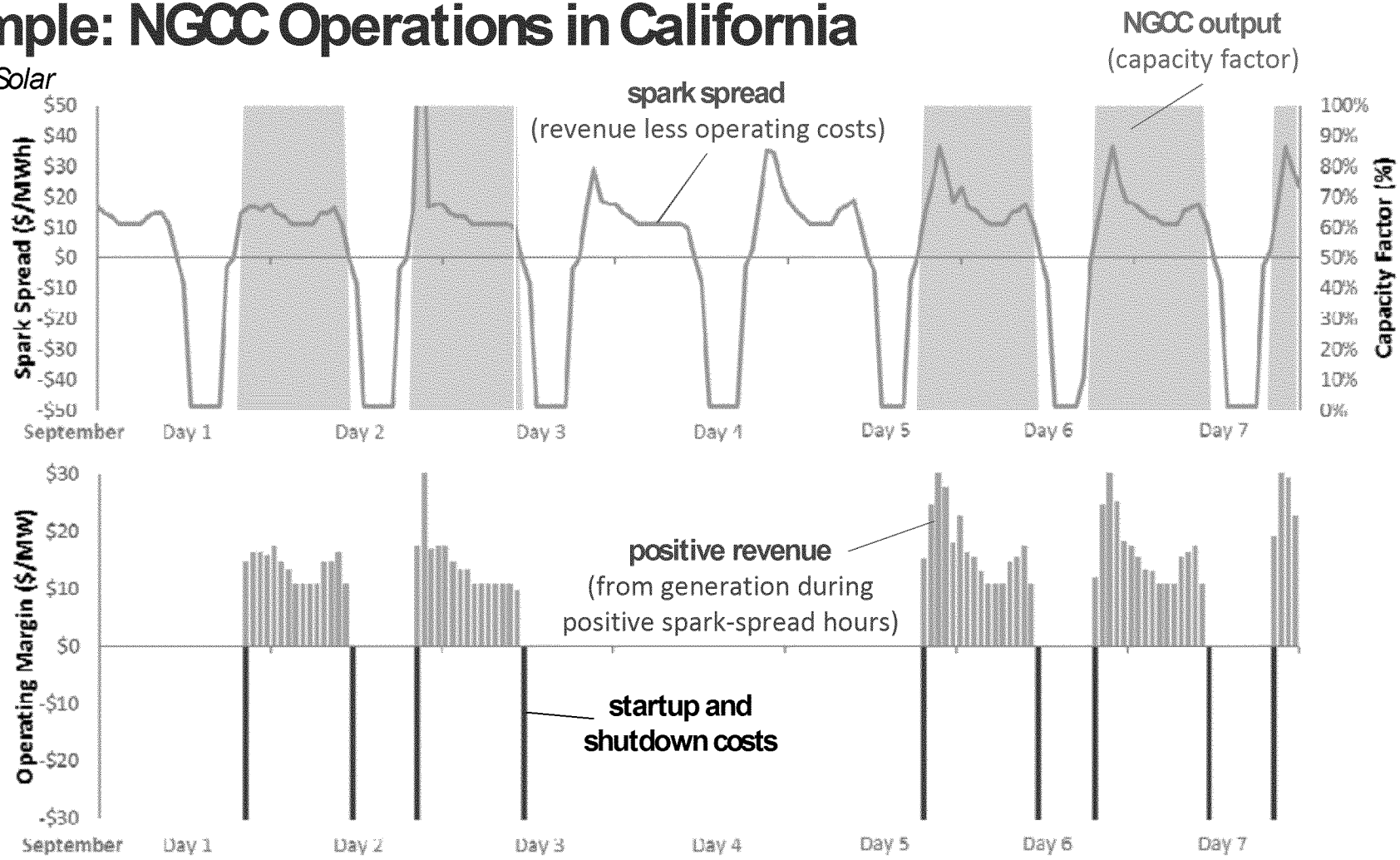
40 GW Solar



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Example: NGCC Operations in California

100 GW Solar



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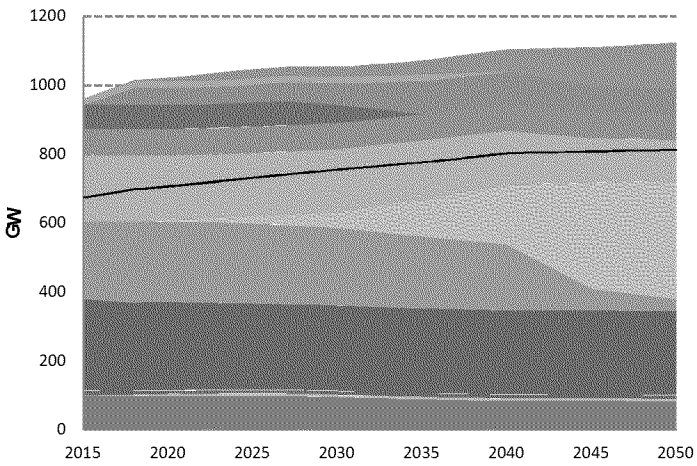
US-REGEN: EPRI's In-House Electric Sector Model

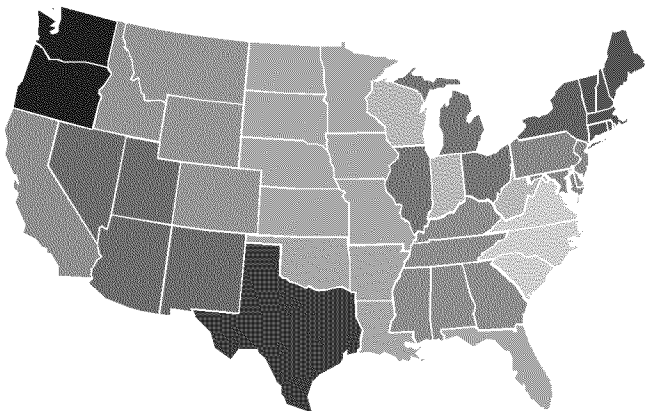
U.S. Regional Economy, GHG, and Energy

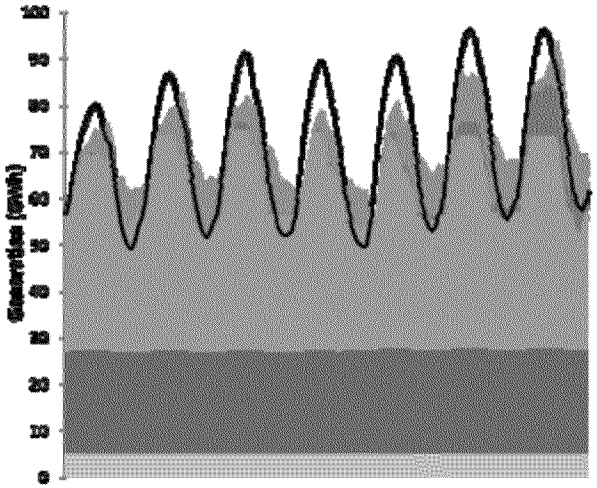
Capacity Expansion Economic Model, Long Horizon to 2050

Customizable State/Regional Resolution for Policy and Regulatory Analysis

Linked with Hourly Unit Commitment Model







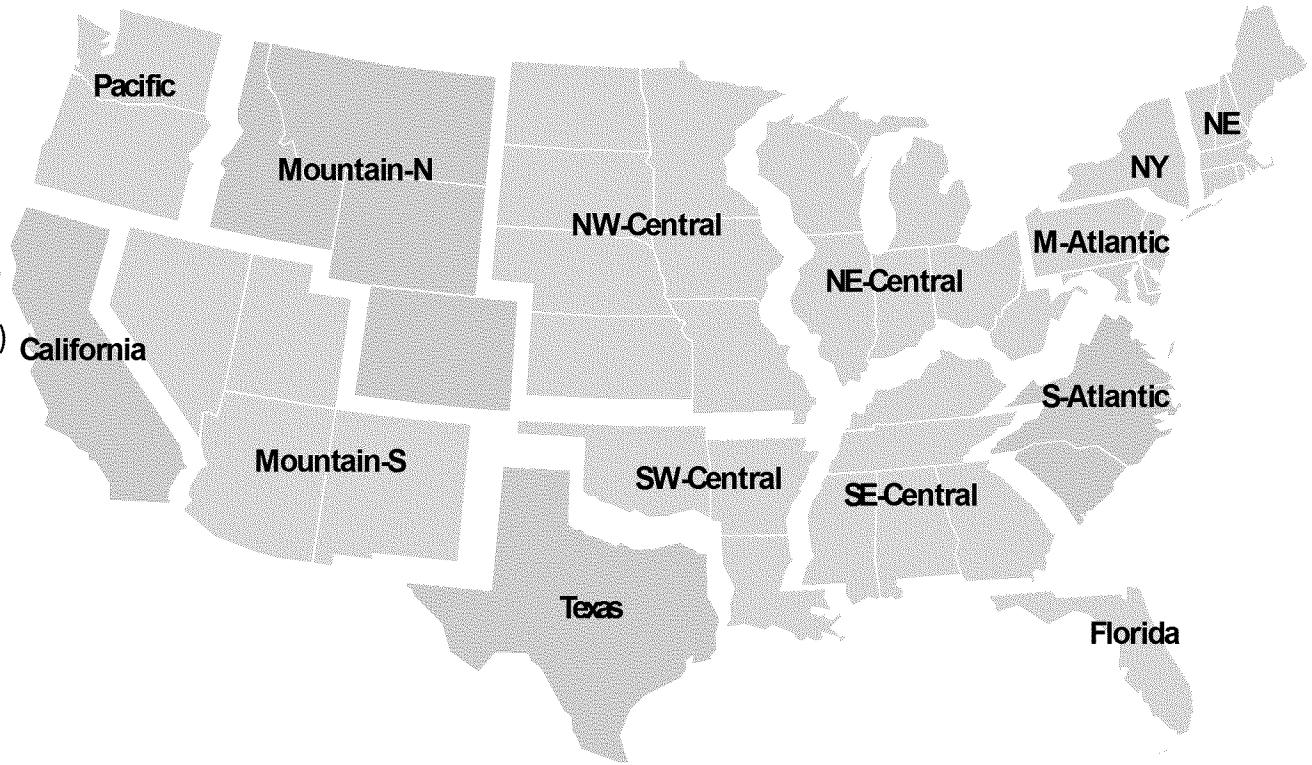
For more information, see our website at http://eea.epri.com

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Scenario Description

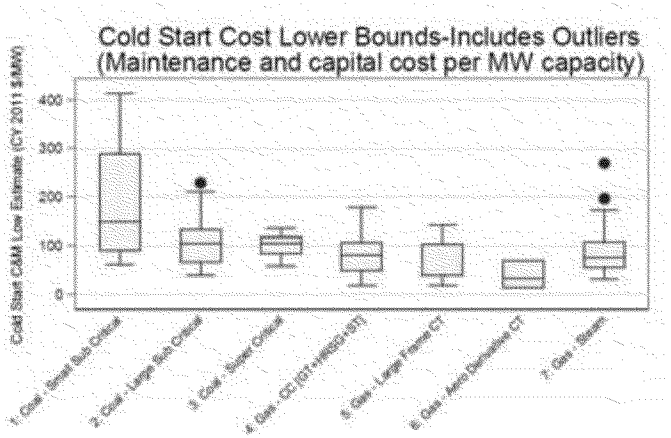
- Focus on **four regions** in **2035**
- Five policy scenarios
  1. **Reference** (current policies only)
  2. **CO_2 tax** ($16/t-$CO_2$ in 2035)
  3. **Solar mandate** (50% in-region demand)
  4. **Wind mandate** (50% in-region demand)
  5. **50/50 solar/wind mandate** (50% in-region demand)
- **Three asset types:** coal and NGCC (existing and new)
- Two parametric sensitivities
  - Lower minimum load
  - Startup costs



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Model Parameters

Startup and Cycling Costs



- Using 25th and 75th percentiles for low/high values, but Intertek considers these "**lower bound costs**"
- By start type, technology, and cost category (O&M, fuel, and other)
- Source: NREL/Intertek (2012), "Power Plant Cycling Costs"

Minimum Load Levels

	Low	High
Coal	20%	50%
NGCC (New)	20%	50%
NGCC (Existing)	20%	50%

- Value of flexibility connected to initial ("High") and final ("Low") parameters for minimum load levels
- Using the same values enables apples-to-apples comparisons across asset types
- Sources: NREL/Intertek (2012), BNEF

Heat Rate

	Full (MMBtu/MWh)	Penalty (% Increase)
Coal	9.2	15%
NGCC (New)	6.8	20%
NGCC (Existing)	8.2	20%

- Using representative assumptions for existing supercritical coal, new NGCC, and existing NGCC
- Sources: ABB Velocity, EPRI

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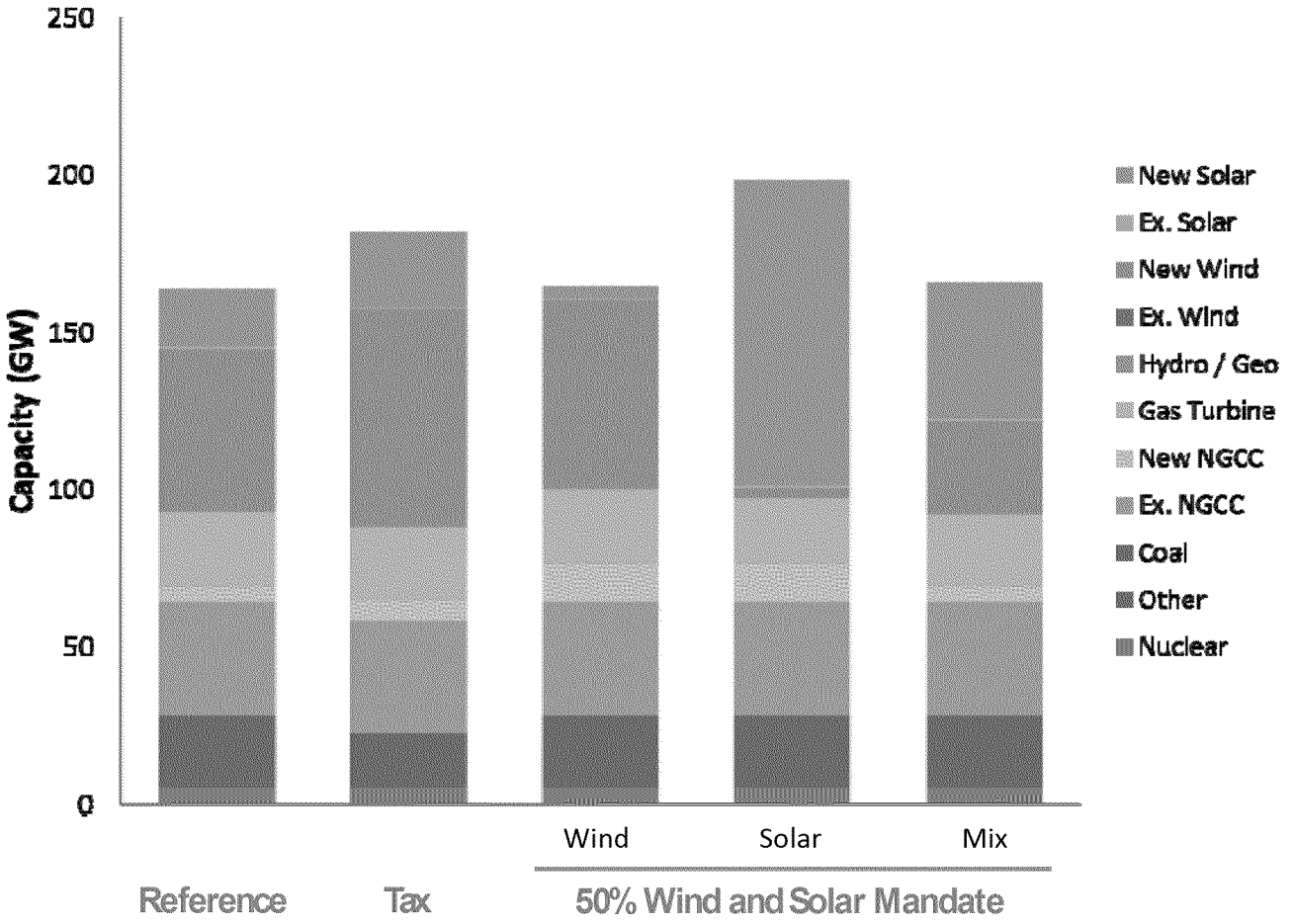
Detailed Regional Results

Enhanced Operational Flexibility and Cycling Impacts in Texas

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Scenario Assumptions Drive Investments: 2035 Capacity in Texas



Observations

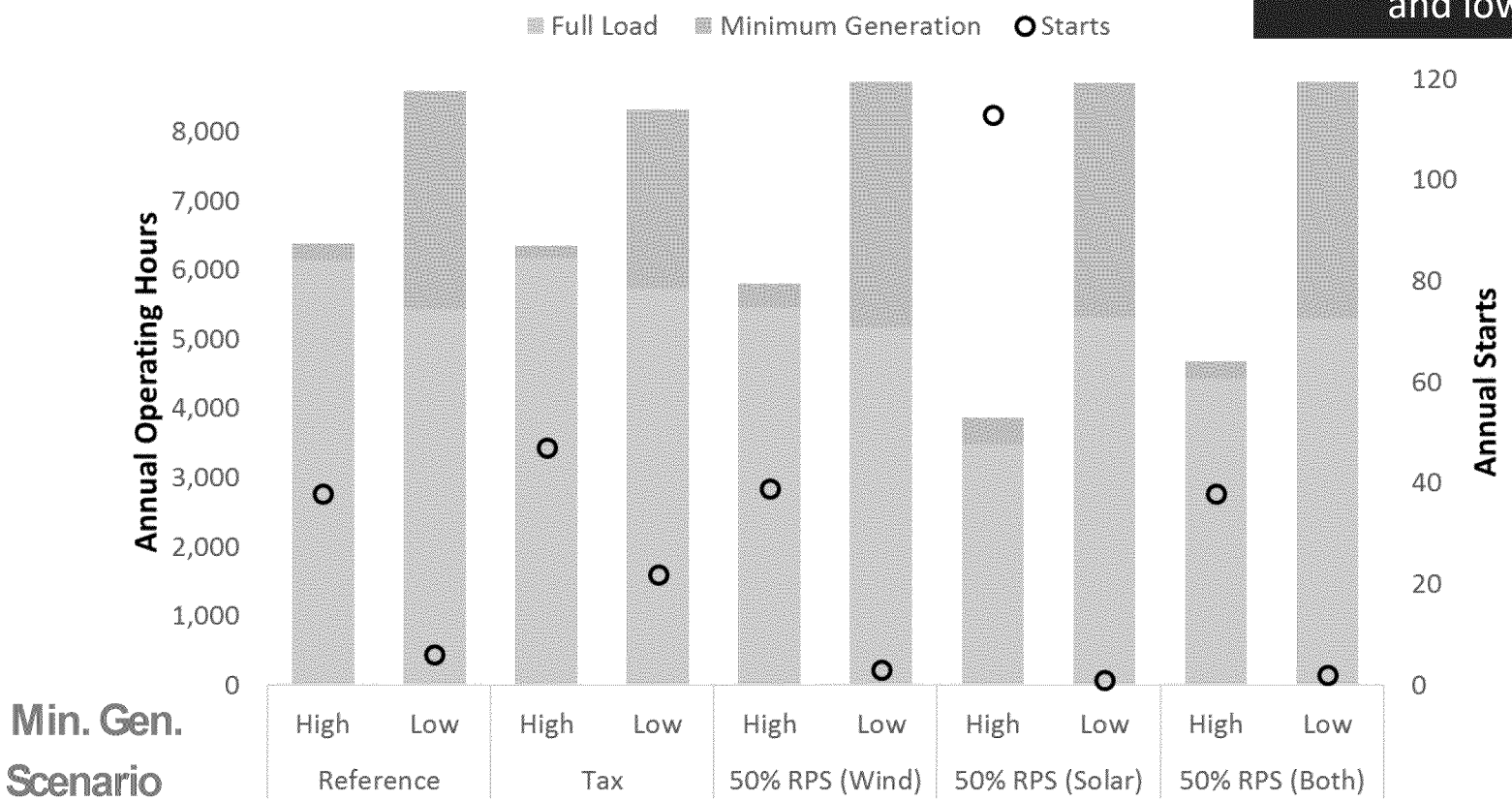
- Wind development is extensive in the reference scenario
- CO_2 tax forces some coal retirements but more significant changes in dispatch
- Under 50% RPS, lower capacity needs when portfolio of renewable technologies included
- Caveat: Changes in other regions under these scenarios, which are not shown here

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Changes in Operations with Lower Minimums

Texas, NGCC (New)

Higher capacity factors when NGCC units can avoid starts and lower losses

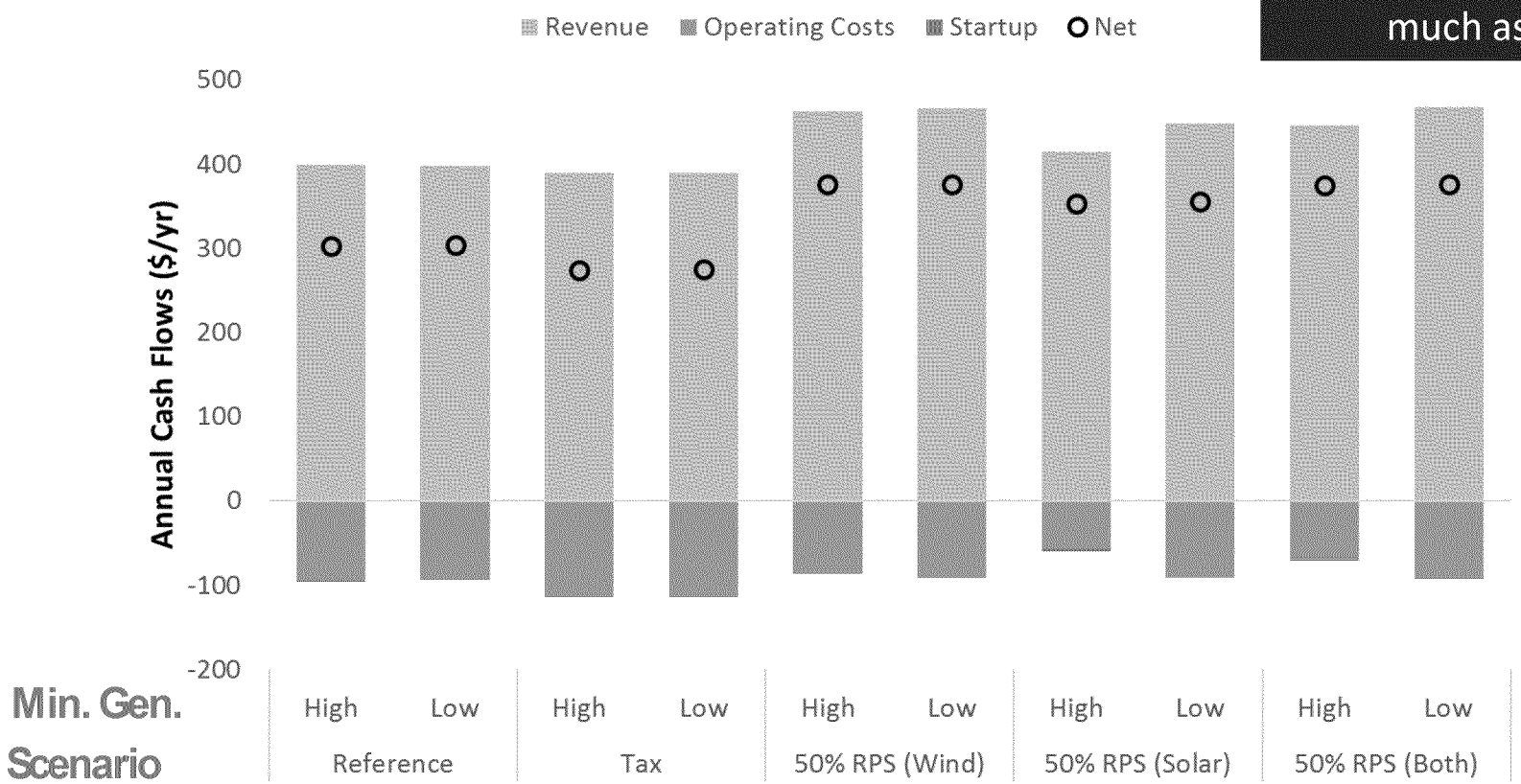


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Changes in Operating Revenues with Lower Minimums

Texas, NGCC (New)

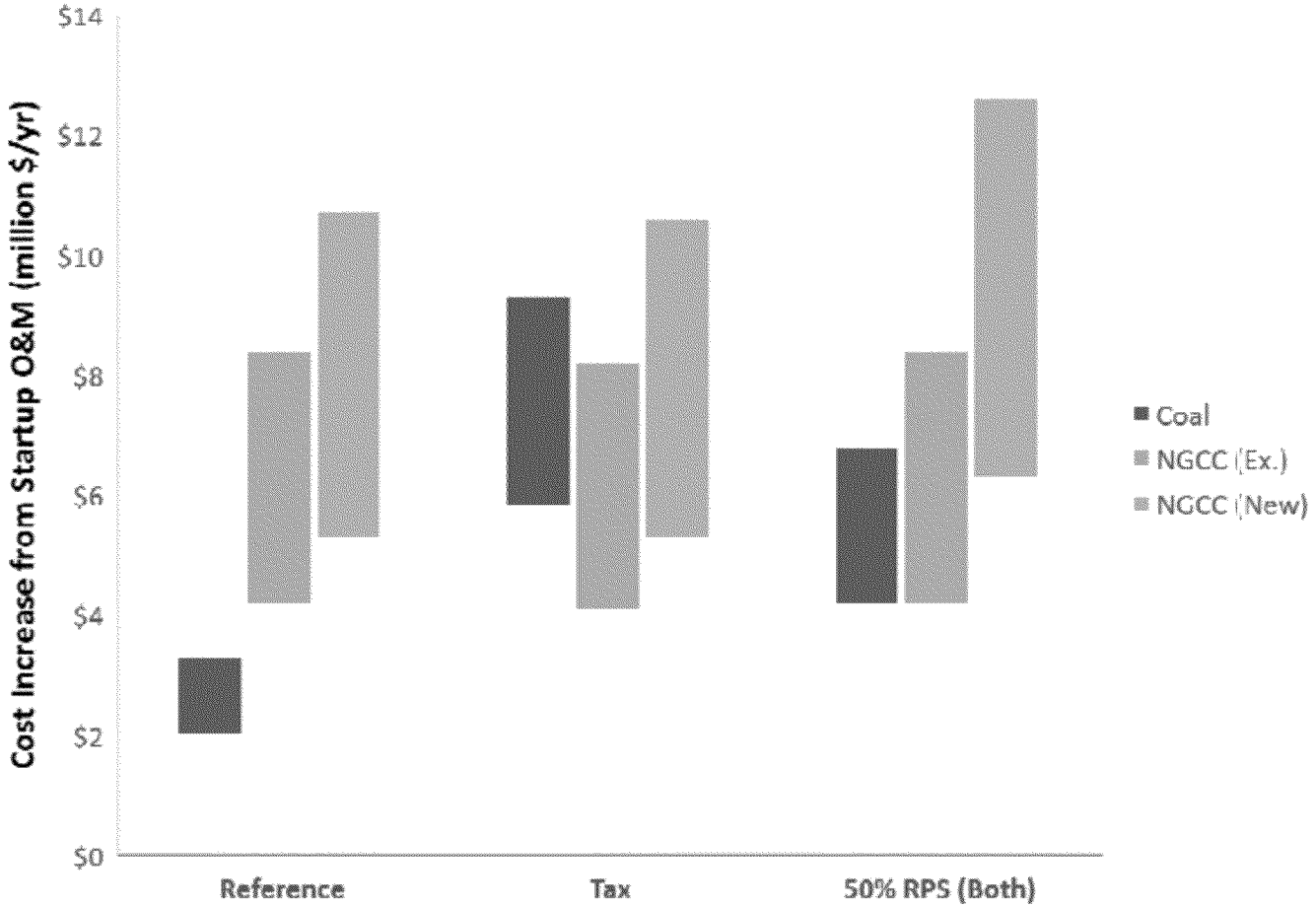
Total annual operating margins do not change as much as dispatch



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Long-Run Cost of Simple Dispatch

Texas



Notes

- Vertical axis = long-run O&M costs due to cycling if dispatch is based only on short-run marginal costs
  - Based on Intertek (2012)
  - Range shows 25th/75th %ile
- Costs track number of starts

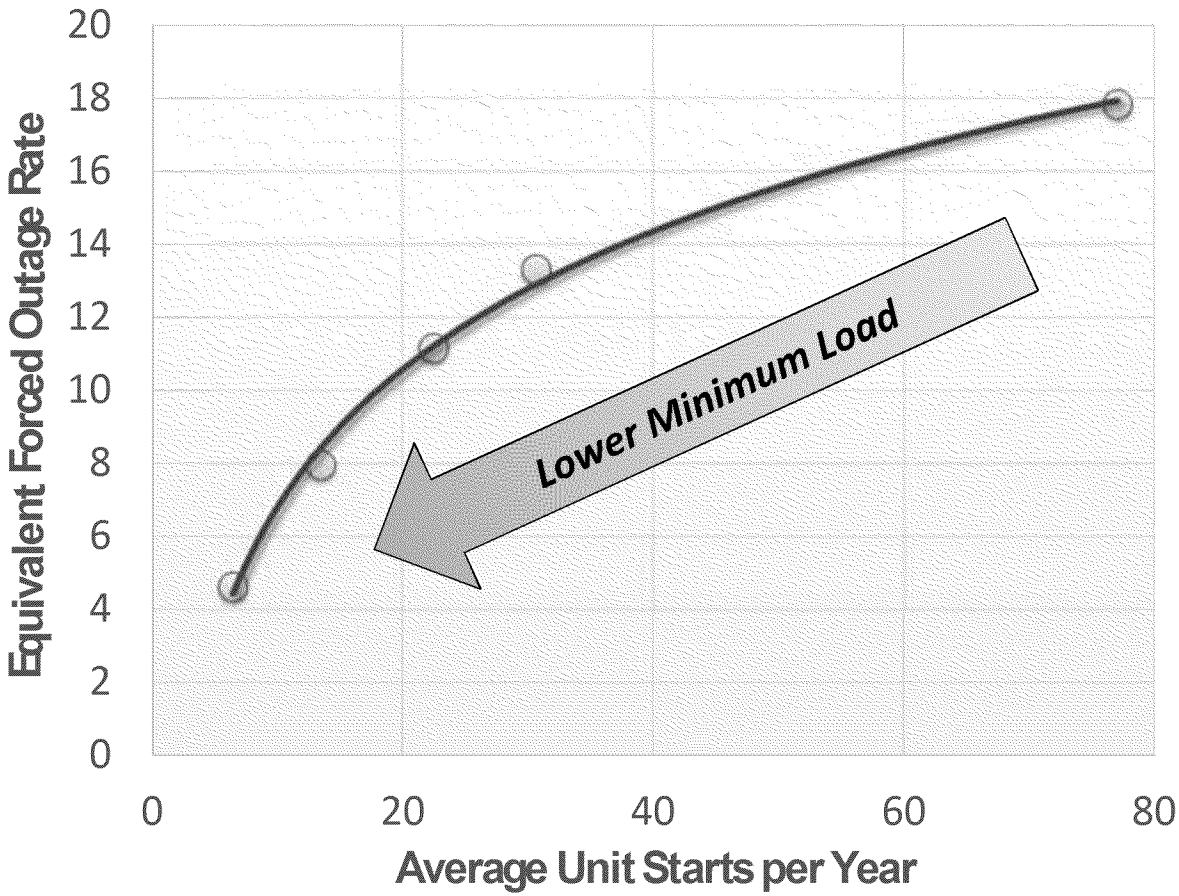
Takeaways

- CO_2 tax scenarios increase cycling and costs for coal units
- Startups are lower for coal since in-the-money for many hours (opposite for existing NGCC)
- High renewable deployment drives greater system ramping/flexibility needs

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Caveats

- Not including full range of possible O&M costs
- Not including possibility of early retirement
- Not including changes in outage rates



Lowering minimum load reduces startups, which reduces EFOR

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Observations: Lower Minimum Loads in Texas

- Expected returns for coal- and gas-fired generators are shaped by future market and policy conditions
  - Operational characteristics are a second-order driver of profitability
  - Flexibility allows assets to adapt to bearish markets
- Plant flexibility impacts operations more than annual margins
  - Especially true for mid-merit units
  - Could impact long-run closures if cycling O&M is more costly than currently anticipated, especially since damage mechanisms give rise to "lumpy" costs
- Preparations for flexible operations can help regardless of which state-of-the-world obtains

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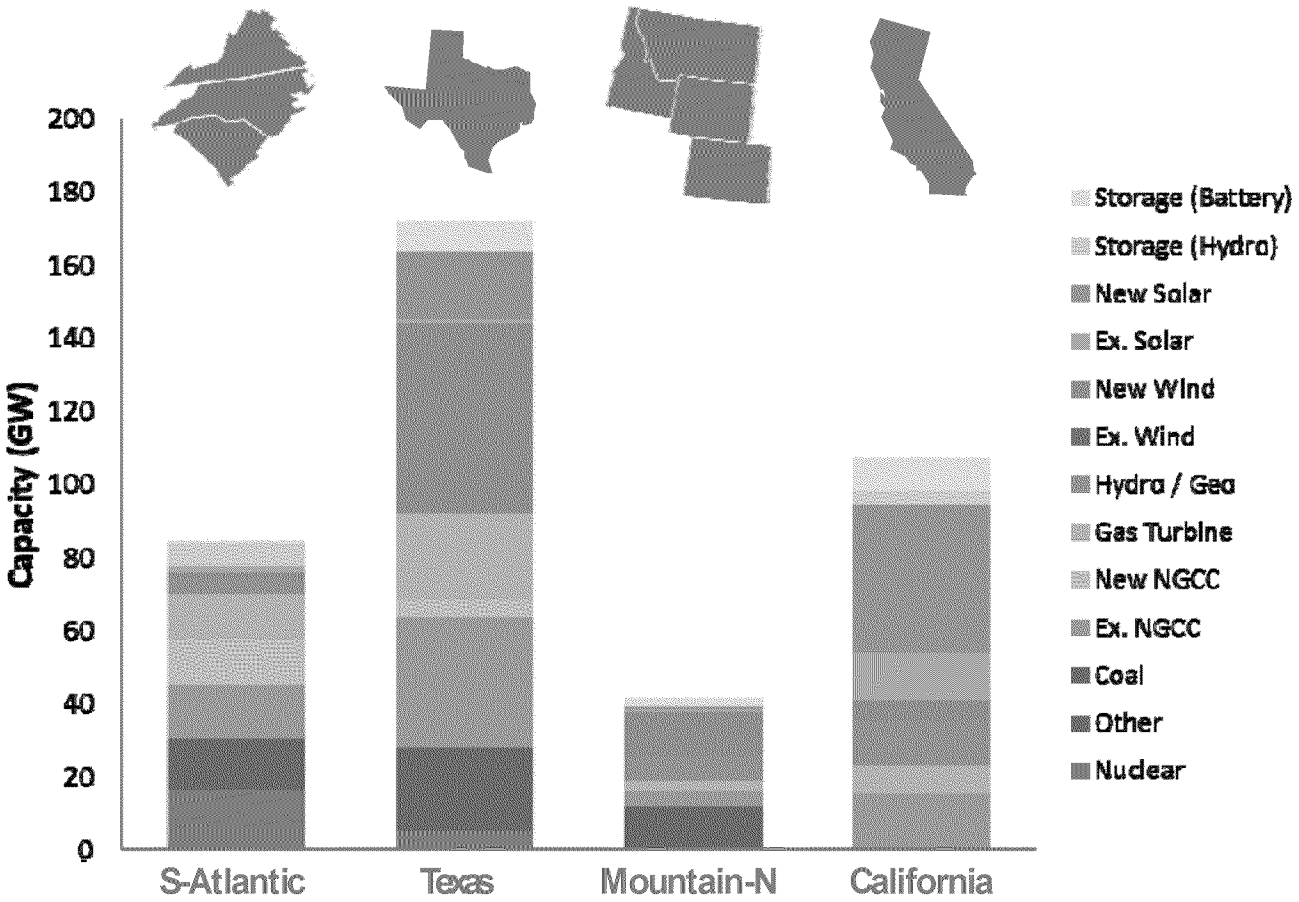
Cross-Regional Comparison

How well do insights about flexible operations transfer to other regions?

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Capacity and Minimum Generation Levels Vary across Regions

Reference Scenario in 2035



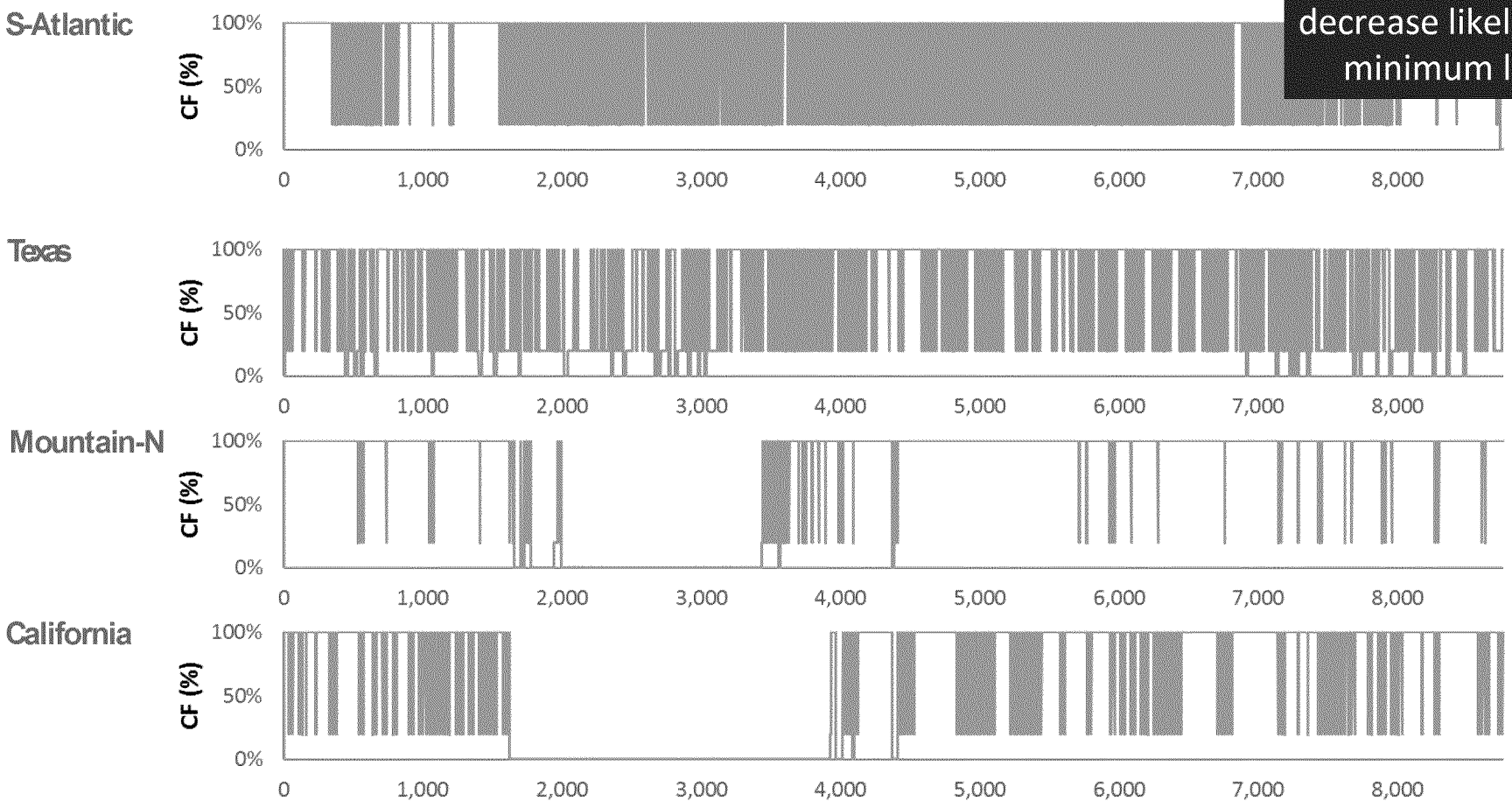
Observations

- Grid sizes and compositions vary significantly without policy
- Economics of wind are strong in Texas and Mountain-N even without policy support
- S-Atlantic has more inflexible generation (in absolute and relative terms) than other regions

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Hourly Dispatch of New NGCC Unit under Reference Conditions

Extended shutdowns decrease likelihood that lower minimum loads will help

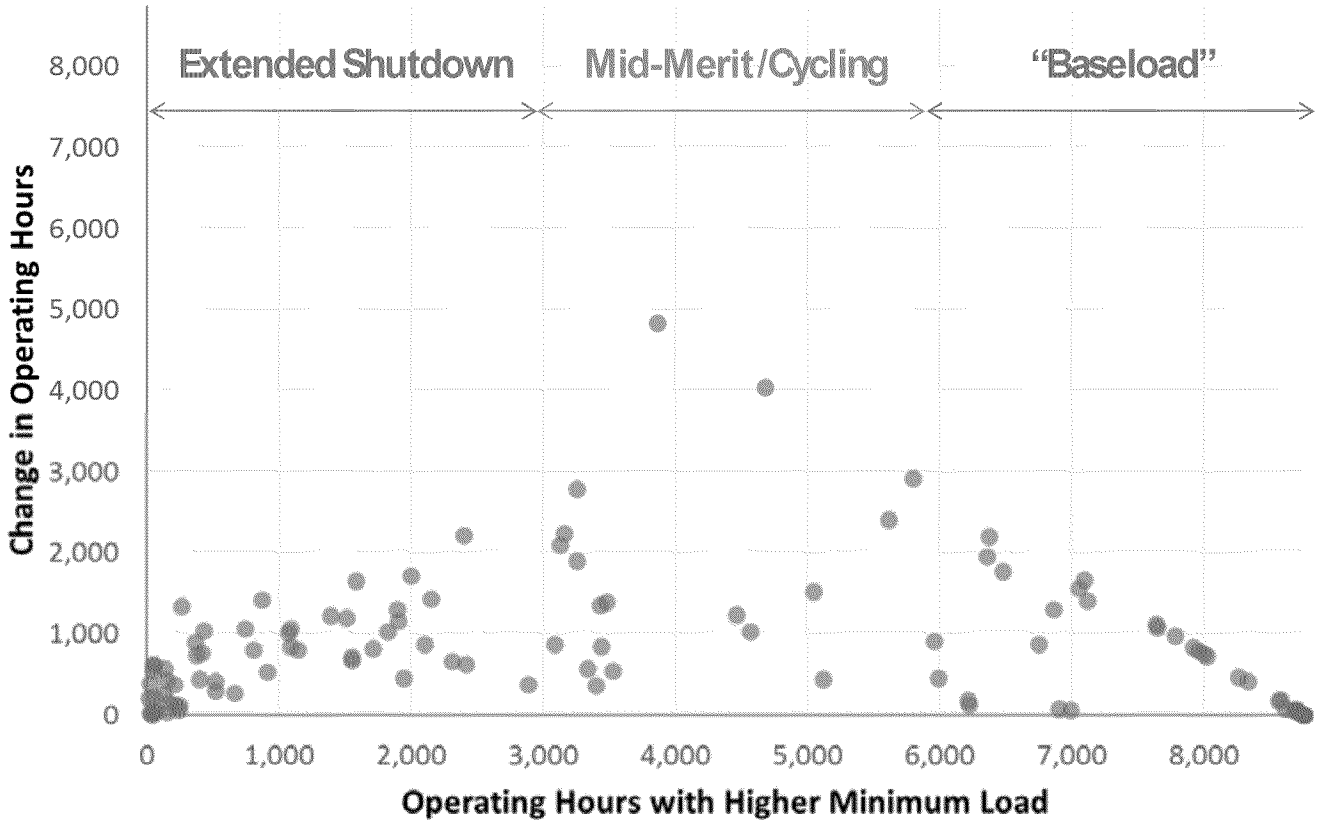


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Changes in Operating Hours with Lower Minimum Load

All Regions, Scenarios, and Asset Classes

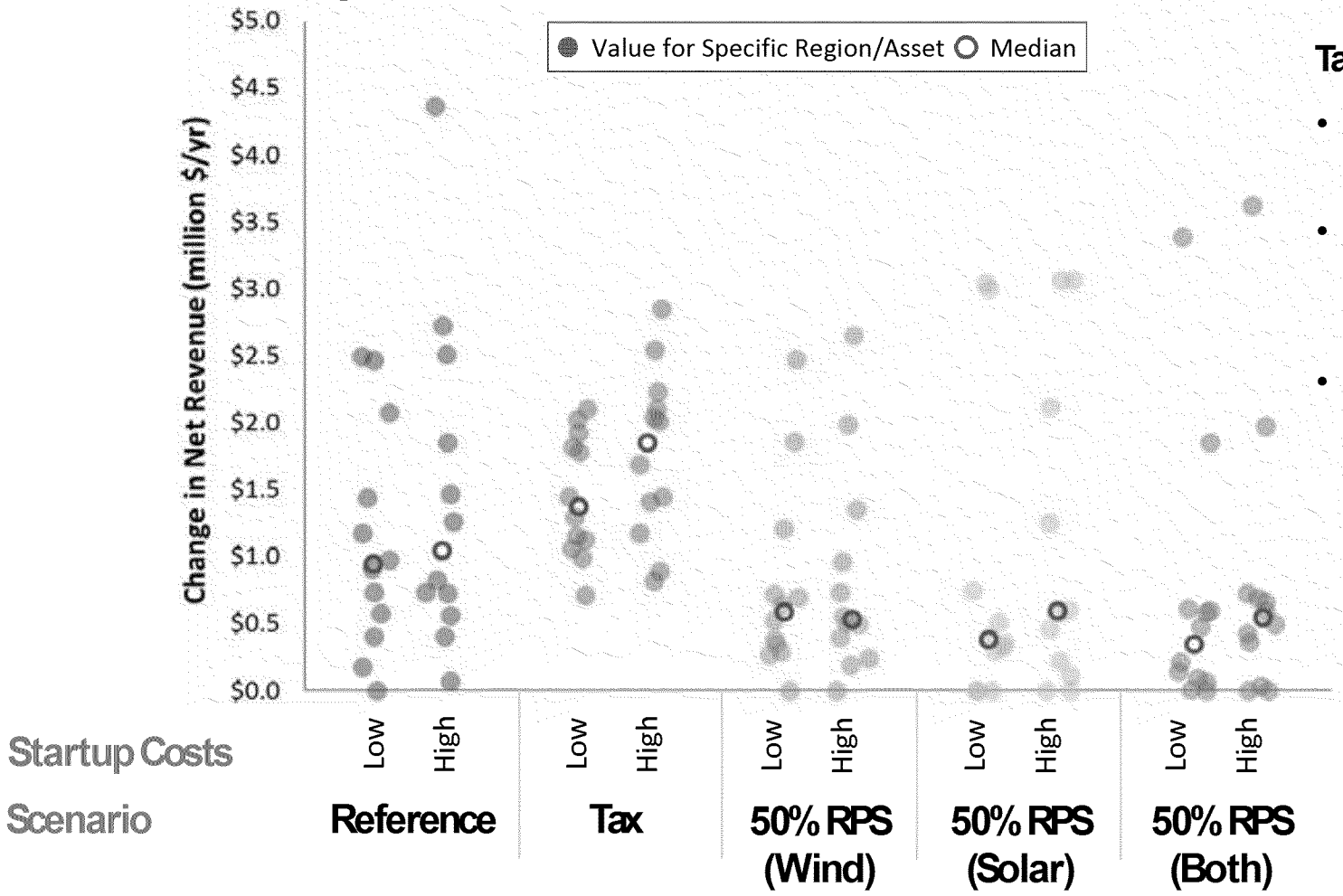


Mid-merit units benefit most from lower minimum loads

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Profitability Increases with Lower Minimum Loads

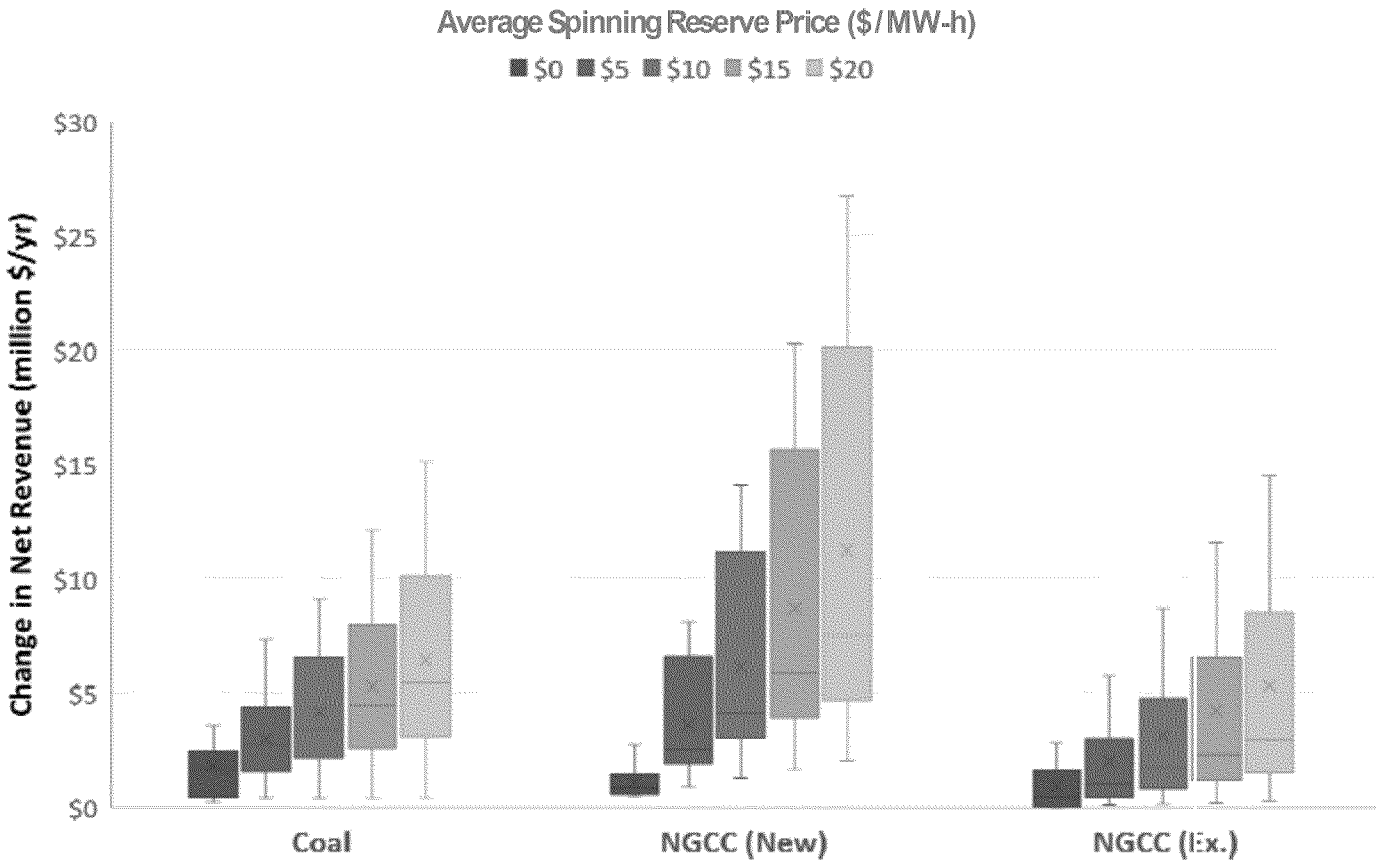


Takeaways

- Flexibility can be valuable even without significant VRE buildout
- Lower minimum generation is most valuable (on average) under a CO_2 tax (e.g., coal as mid-merit)
- Under 50% RPS scenarios, net profitability impacts are similar, even though system costs vary
  - Seasonal/diurnal patterns differ, but offsetting effects
  - RPS often induces seasonal layups, which lower the value of flexibility

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How Valuable Are Lower MinGen Levels with Reserve Revenues?



Takeaways

- NGCC benefits most from reserve revenues due to higher number of hours at minimum generation (i.e., with capacity headroom)
- Ancillary services revenues can boost economics of flex. ops., but markets are uncertain and "thin"
- System forecast errors become more important to track over time
  - Impact reserve needs/prices
  - Essential also for determining least-cost commitment schedule, especially if starts are costly

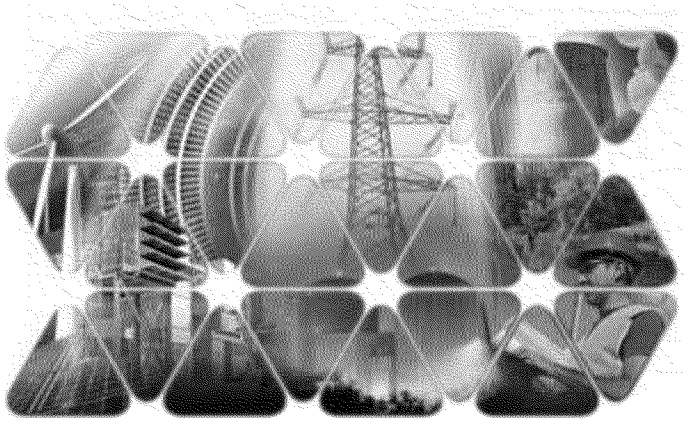
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Takeaways

- Flexibility (e.g., through lower minimum loads) lowers costs
  - Profitability impacts accrue in the long term, even though the most significant operational impacts are related to short-run dispatch
  - Difficulty: Long-run cycling costs are uncertain!
- Lower minimums are most valuable when…
  - Policies rearrange merit order (e.g., CO_2 tax)
  - Mid-merit units (e.g., new NGCC) are considered
  - Regions/scenarios do not force seasonal layup
  - Units are more flexible than other comparable generators
- Discrepancy between system value of flexibility and incentives for generators to provide?
- Ancillary services revenues improve prospects for flexible operations, but their market outlook and depth are unknown

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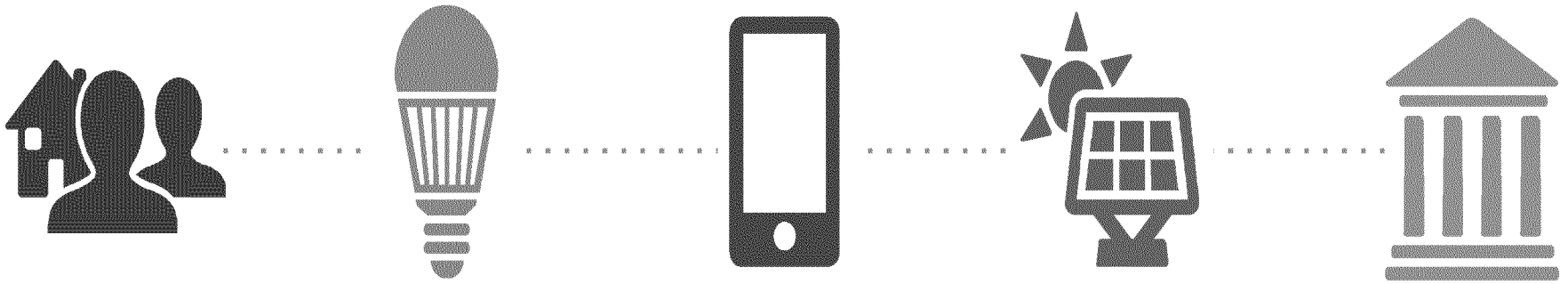


Integrated System Planning

EPRI Seminar on Fuels, Markets & Planning - November 8th, 2017

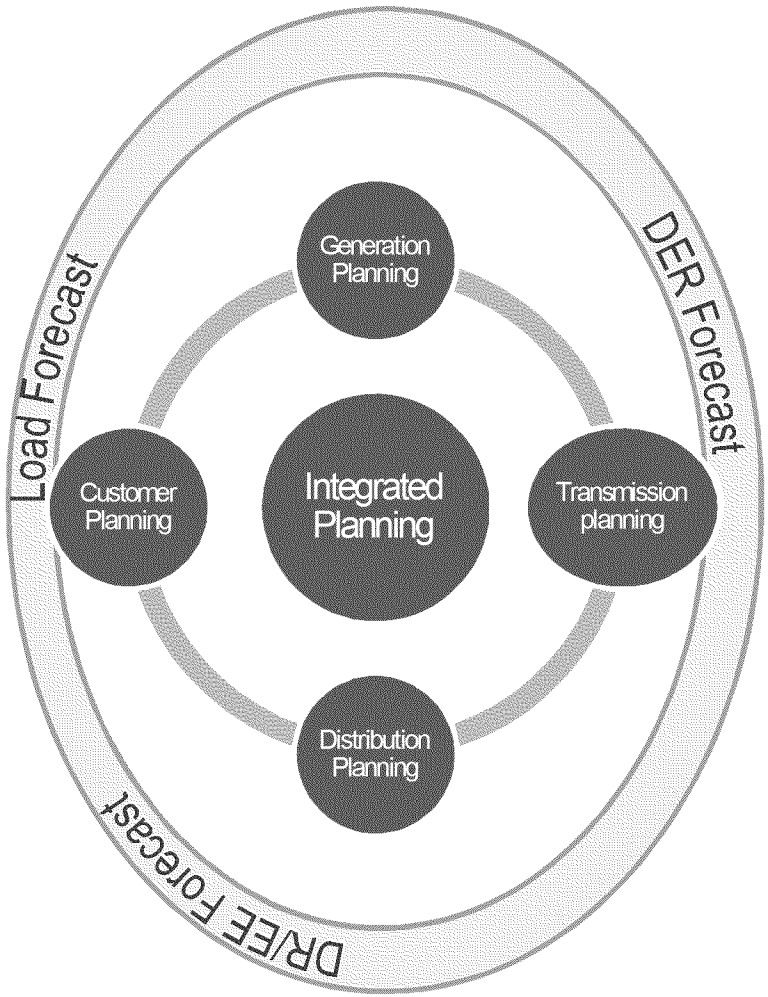
DUKE ENERGY®

Macro-trends are driving transformational change

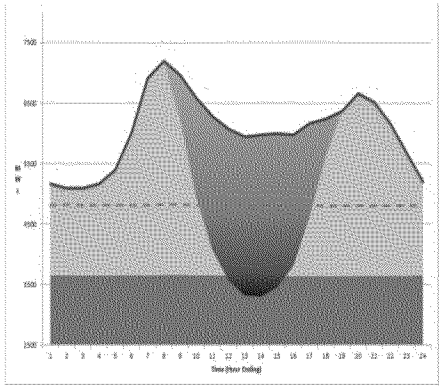


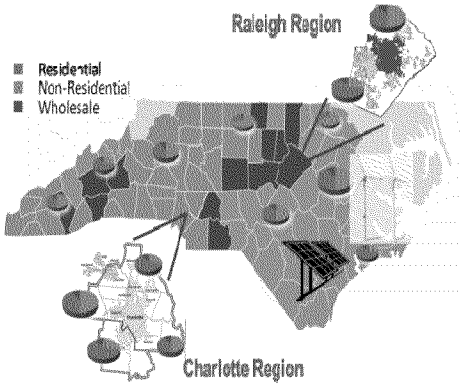
Customers	Energy efficiency	Technology	Fuel choices	Regulatory
Now expect convenience, control and options; want even greater reliability and value.	Gains in energy efficiency are flattening growth in energy consumption .	Beginning to reshape the way our customers consume electricity.	Fuel choices become even more important as demand for renewables increases.	Ongoing discussions around the utility of the future.

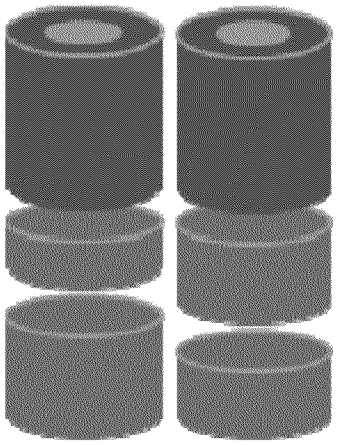
Integrated planning must capture value across the system

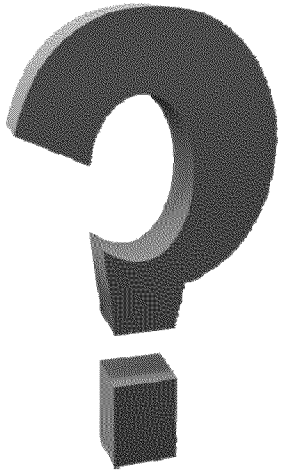


Integrated planning must mirror operational realities

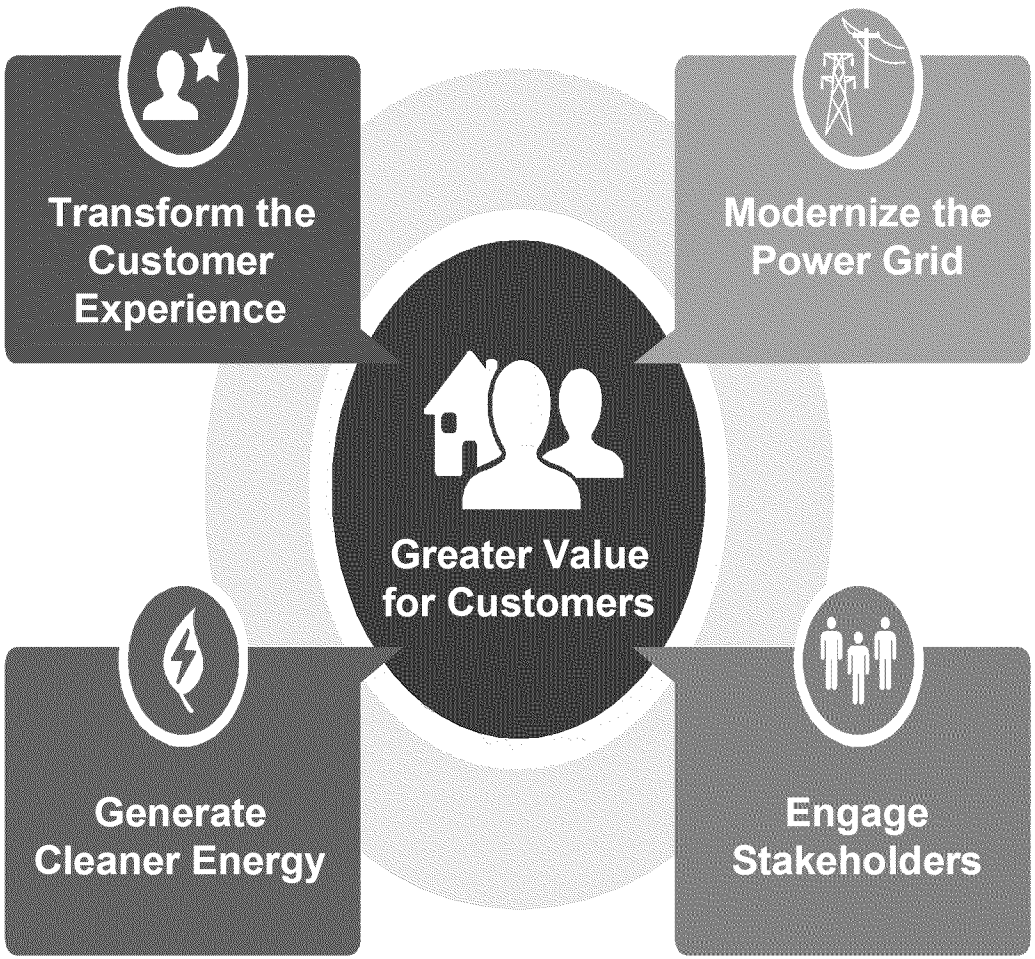


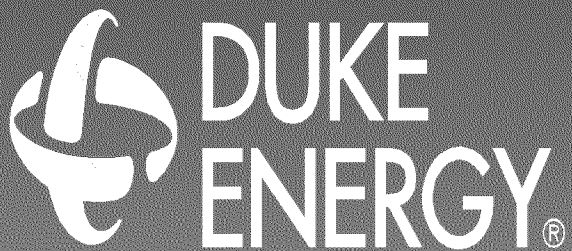






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Integrated Resource Planning

GHG reduction in California

EPRI 2017 Annual Seminar on Fuels, Power Markets and Resource Planning

Jenifer Hedrick P.E.

November 9, 2017

Energy for What's Ahead™

SOUTHERN CALIFORNIA EDISON®

SCE Highlights

One of the nation's largest electric utilities

- 15 million residents in service territory
- 5 million customer accounts
- 50,000 square-mile service area

Significant infrastructure investment

- 1.4 million power poles
- 729,000 transformers
- 119,000 miles of distribution and transmission lines
- 3,200 MW owned generation

Above average rate base growth driven by

- Safety and reliability
- California's low-carbon objectives
  - Grid modernization
  - Electric vehicle charging
  - Energy storage
  - Transportation electrification (proposed)

Limited Generation Exposure

- Own less than 20% of its power generation
- Future needs via competitive solicitations

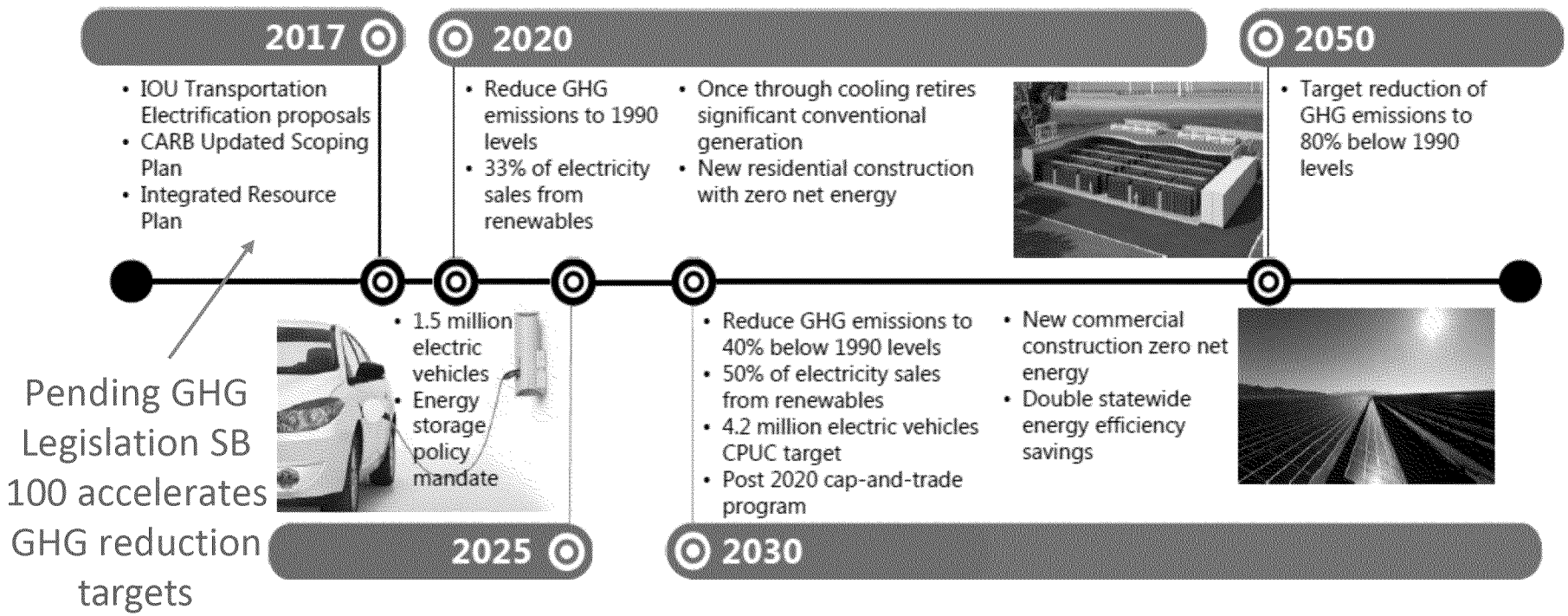


SCE Service Territory

October 31, 2017
https://www.edison.com/content/dam/eix/documents/investors/everts-presentations/eix-october-2017-business-update.pdf

17cv01906 Sierra Club v. EPA ED_001523_00006048-00002

California Climate Policies – Future Timeline



Achieving California's expansive energy and environmental policy goals will require taking foundational steps to evolve the electric grid and further develop new technologies

Source: http://www.edison.com/content/dam/eix/documents/investors/events-presentations/20170412-edison-insights-series-presentation.pdf

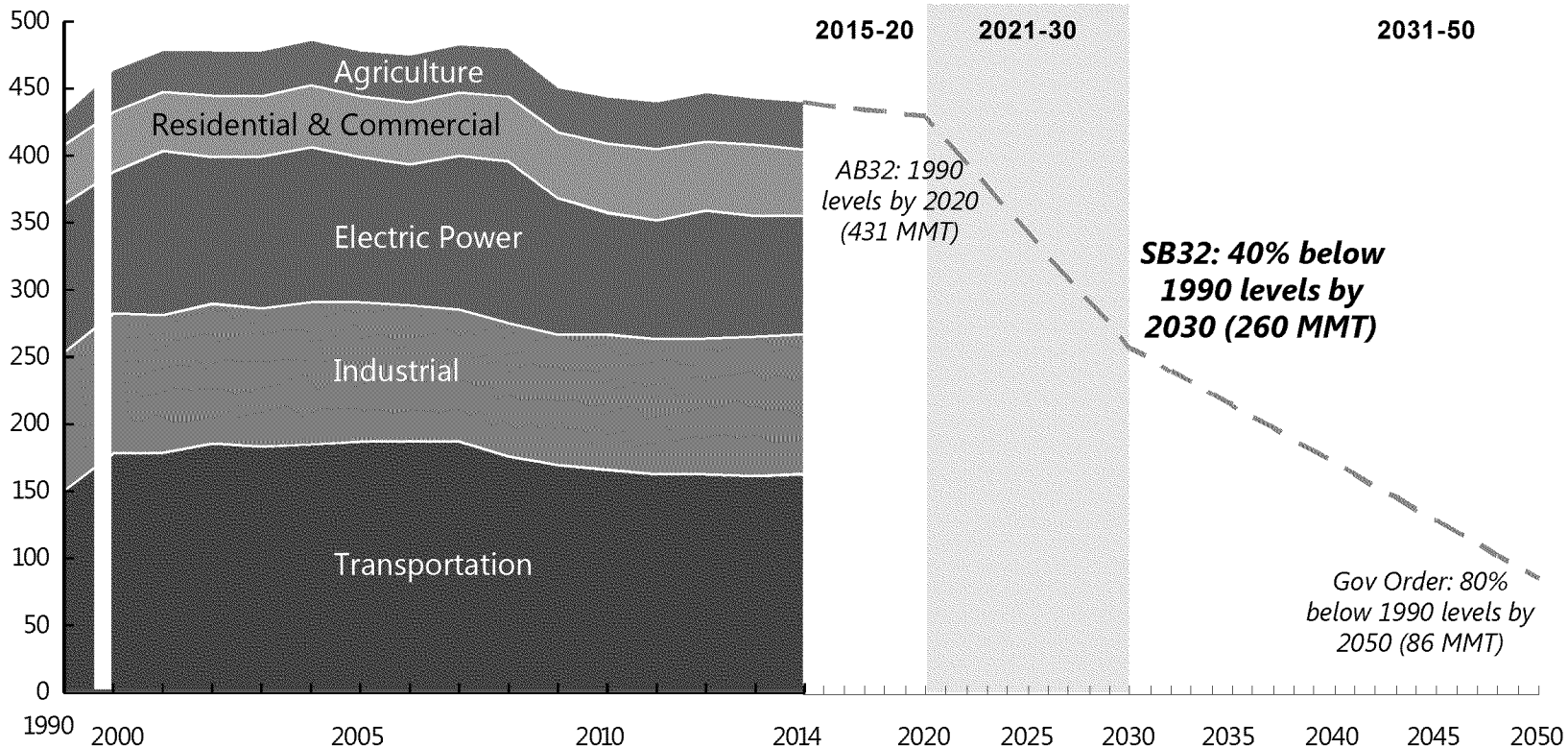
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ED_001523_00006048-00003

Achieving CA's SB32 targets in 2030 requires a dramatic acceleration of GHG emission reductions

California GHG Emissions[1]

million metric tonnes CO2 equivalent (MMT)



Source: www.arb.ca.gov/cc/inventory/data/data.htm

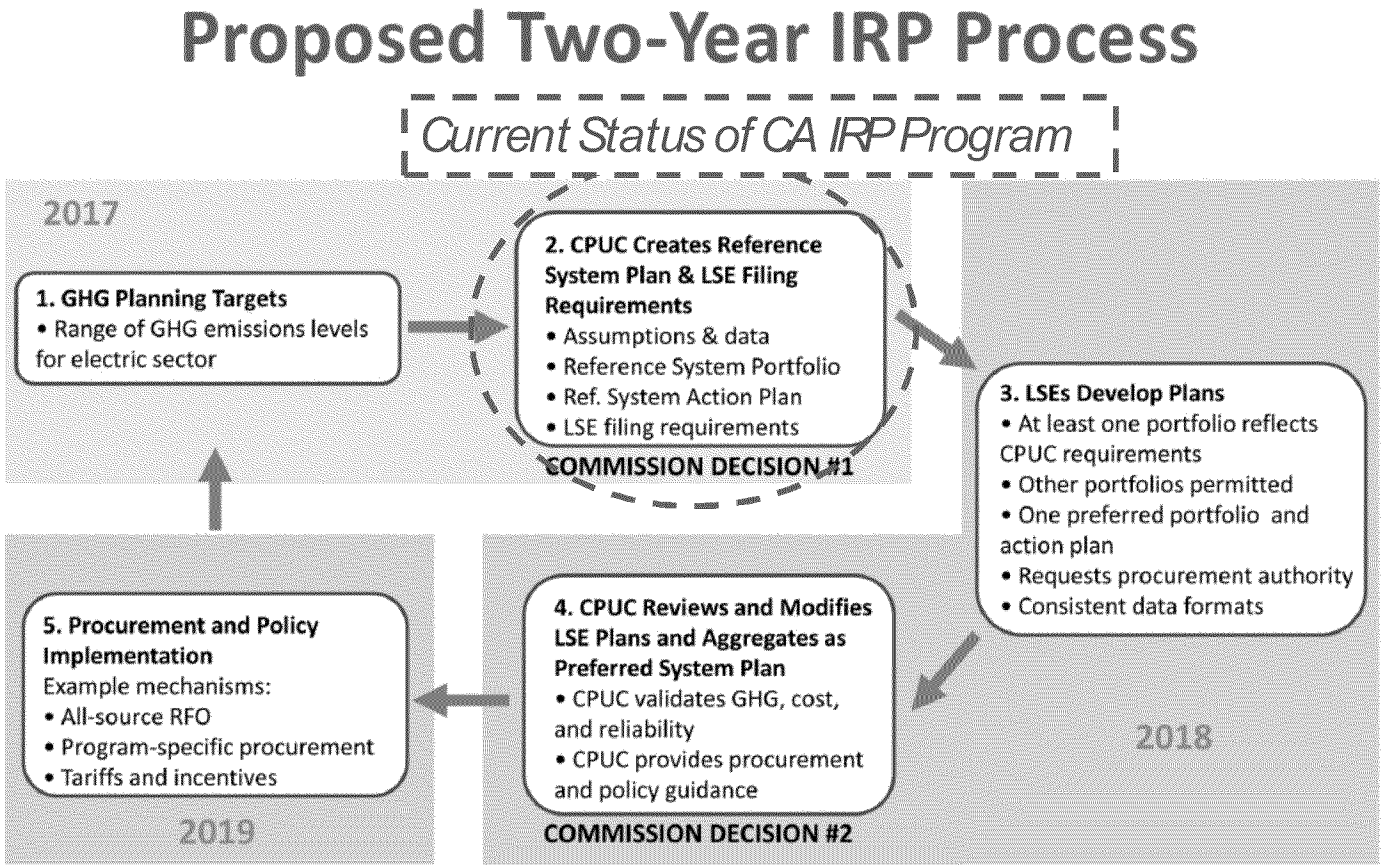
1) Total emissions excludes 54 MMT CO2 equivalent per AB32 definition (including portions of transportation and industrial as well as military)

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California Air Resource Board Scoping Plan

Estimated GHGs by Sector [MMTCO2e]			
	1990	2030 Scoping Plan Ranges[66]	% change from 1990
Agriculture	26	24–25	-8 to -4
Residential and Commercial	44	38–40	-14 to -9
Electric Power	108	30–53[67]	-72 to -51
High GWP	3	8–11[68]	267 to 367
Industrial	98	83–90[69]	-15 to -8
Recycling and Waste	7	8–9[68]	14 to 29**
Transportation (Including TCU)	152	103–111	-32 to -27
Natural Working Lands Net Sink*	-7***	TBD	TBD
Sub Total	**431**	**294–339**	**-32 to -21**
Cap-and-Trade Program	n/a	34–79	n/a
Total	**431**	**260**	**-40**

California Public Utilities Commission lead IRP process for LSEs



Impact, Scope and Schedule of IRP

IRP has the potential to re-shape California's Electric Sector Way-of-Doing-Business

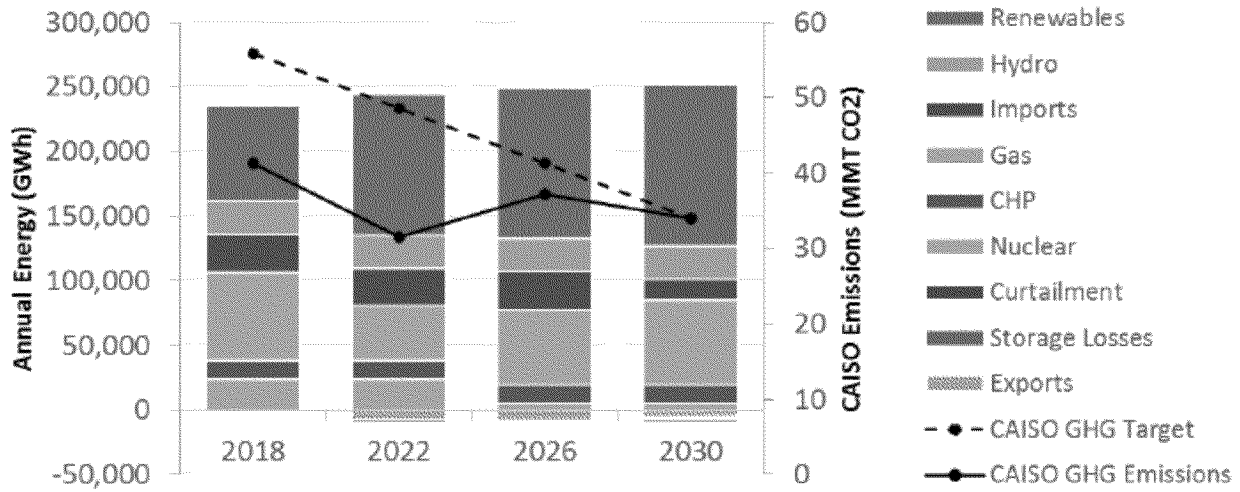
- IRP becomes the state's key resource decision-making forum
  - IRP reconstructs resource planning in California
  - Centralized, not piecemeal decision making
  - Process for transparent and comparative special studies of state interest
- 'Need' is 'de-constructed' and can be any system attribute or characteristic – e.g. flexibility, VARs, replacement of usable resources with low GHG resources, solar PV and curtailment correlations, wire vs DERs, etc
- All resources to be compared on a common cost effectiveness platform
  - Procurement adders & characteristics
  - Marginal cost from IRP used to compare all resources

CAISO Energy Balance
42 MMT Statewide Target

2. CPUC Creates Reference System Plan & LSE Filing Requirements
- Assumptions & data
- Reference System Portfolio
- Ref. System Action Plan
- LSE filing requirements

COMMISSION DECISION #1

- Additional near term renewable build displaces energy from gas and reduces GHG emissions below GHG target in 2018 & 2022
- Energy from gas rebounds by 2026 with Diablo Canyon closure, but imports decrease to meet GHG target by 2030
- RESOLVE results show imports decline relative to in-state gas use because the GHG emissions factor that CARB assigns to imported electricity is larger than California CCGT emission factors



IV. Preliminary Results

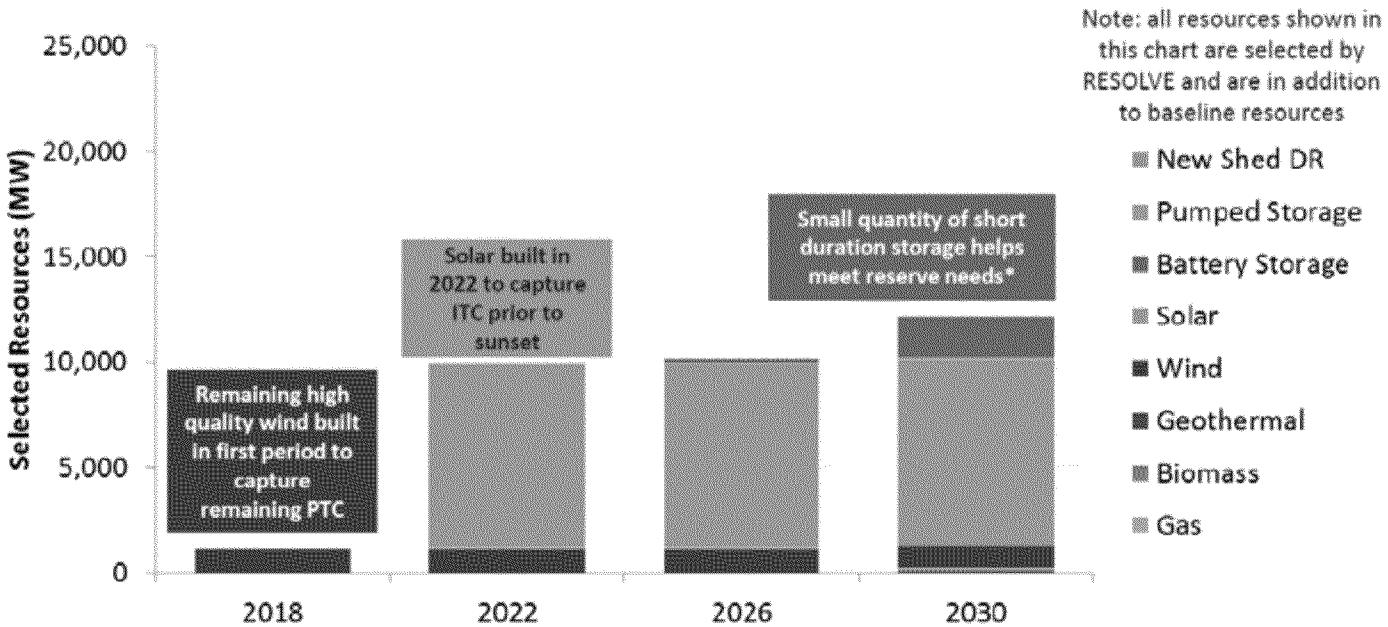
56

2. CPUC Creates Reference System Plan & LSE Filing Requirements
- Assumptions & data
- Reference System Portfolio
- Ref. System Action Plan
- LSE filing requirements

COMMISSION DECISION #1

RESOLVE Output: Resources Selected in 42 MMT Case

- Model selects ~9 GW of new utility-scale solar; 1,100 MW in-state wind; and 2,000 MW battery storage in addition to expected baseline of EE, DR, storage, renewables, hydro, gas, and nuclear
- Few additional resources needed for balancing (no new gas or pumped storage; 200 MW geothermal)
- Total incremental cost is $239 million/year, equivalent to approximately a 1% increase in system average rates by 2030



* Short-duration services could be provided by "Shimmy DR" resources, which were not modeled explicitly but may have resource potential up to 300 MW. The timing of the need for short duration services is based on a calculation of load-following reserve requirements outside of RESOLVE. There may be benefits to earlier procurement than shown here.

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2. CPUC Creates Reference System Plan & LSE Filing Requirements
- Assumptions & data
- Reference System Portfolio
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COMMISSION DECISION #1

RESOLVE Output: Incremental Total Resource Cost (TRC) to Meet GHG Targets

- Incremental cost of the optimal portfolios ranges from **$239 to $1,137 million per year** for the 42 MMT and 30 MMT GHG targets, respectively
- Primary driver of incremental costs is **new investment in renewables**, whose zero-carbon generation displaces emissions from thermal generation and imports

		Incremental TRC ($MM/yr)	
		42 MMT	30 MMT
Incremental Fixed Costs	*Renewables*	+$843	+$2,203
	Storage	+$45	+$400
	Thermal	—	—
	DR	—	—
	Transmission	—	+$41
Incremental Variable Costs		-$650	-$1,507
Incremental DSM Program Costs		—	—
Incremental Customer Costs		—	—
Incremental Total Resource Cost		**+$239**	**+$1,137**

→ Increased investment in zero-carbon renewables is primary driver of incremental costs

No additional thermal or DR resources added to meet GHG goals

→ Little to no new transmission construction

→ Addition of renewables displaces generation from thermal resources, reducing operating costs

Because demand-side assumptions are constant between scenarios, incremental costs are zero

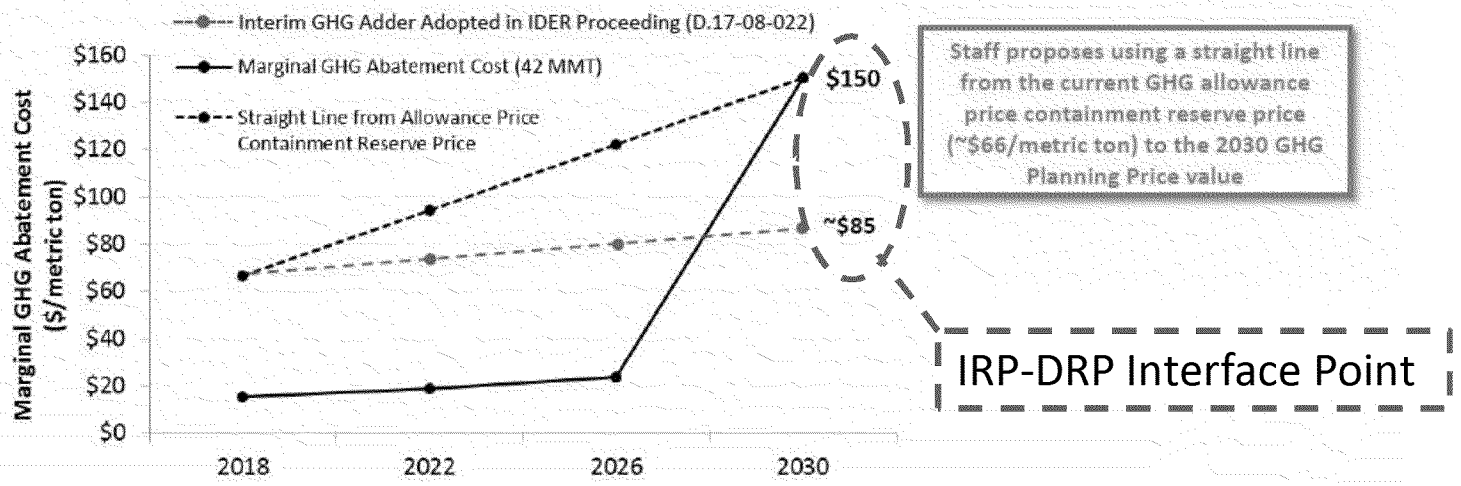
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2. CPUC Creates Reference System Plan & LSE Filing Requirements
- Assumptions & data
- Reference System Portfolio
- Ref. System Action Plan
- LSE filing requirements

COMMISSION DECISION #1

GHG Planning Price

- **Recommended GHG Planning Price for IRP 2017-18: $150/MT in 2030**
  - Represents the CAISO system-wide marginal GHG abatement cost associated with achieving the 42 MMT planning target for the electric sector
  - The GHG Planning Price is an outcome of RESOLVE modeling, which constrains GHG emissions at the system level on an annual basis
  - LSEs would use the GHG Planning Price to develop their own portfolios and benchmark against resources in the Reference System Portfolio and an LSE-specific GHG Emissions Benchmark



17

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IRP – DRP Interface

2. CPUC Creates Reference System Plan & LSE Filing Requirements
- Assumptions & data
- Reference System Portfolio
- Ref. System Action Plan
- LSE filing requirements

COMMISSION DECISION #1

R.16-02-007 JF2/jt2

IDER

[Integrated Distributed Energy Resources]

Conclusions:

- IRP has the ability to produce marginal abatement prices that reflect the system-wide marginal resource abatement cost associated with achieving certain targets, such as GHG or RPS targets

Implications:

- Other proceedings can use marginal abatement prices provided by IRP in their planning, valuation, and procurement processes

Action Items:

- IRP should determine how marginal abatement prices (i.e. the GHG Planning Price) should flow into IDER cost-effectiveness methodologies
- IRP should develop a Common Resource Valuation Methodology (CRVM) in close cooperation with IDER staff
- Staff should identify specific data needs and timing of information flows between IDER and IRP

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IRP – DRP Interface

R.16-02-007 JF2/jt2

2. CPUC Creates Reference System Plan & LSE Filing Requirements
- Assumptions & data
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- Ref. System Action Plan
- LSE filing requirements

COMMISSION DECISION #1

DRP (1 of 2)

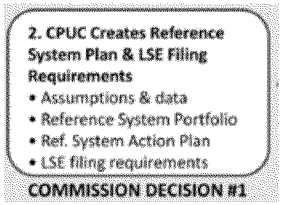
[Distribution Resources Plan]

Conclusions

There are two major interaction areas between IRP and DRP:

- Grid integration costs and benefits of DERs at system level need to be calculated
  - RESOLVE does not currently account for grid integration costs and benefits of DERs
  - DRP future refinements to the locational net benefit analysis (LNBA) include calculation of net DER integration costs at the Distribution Planning Area level, but calculation of a system level costs/benefits is not currently in scope of LNBA working group
- Transparent and consistent DER growth forecasts are needed for both IRP and DRP
  - IRP needs a clear set of planning assumptions in order to run scenarios on the impact of policy levers on each DER
  - DRP staff is coordinating CEC on development of DER growth scenarios, and ensuring the process will meet IRP needs
  - Currently discussing what adjustments may be needed to the IEPR demand forecast process to meet IRP and DRP needs

IRP – DRP Interface



R.16-02-007 JF2/jt2

DRP (2 of 2)

[Distribution Resources Plan]

Implications:

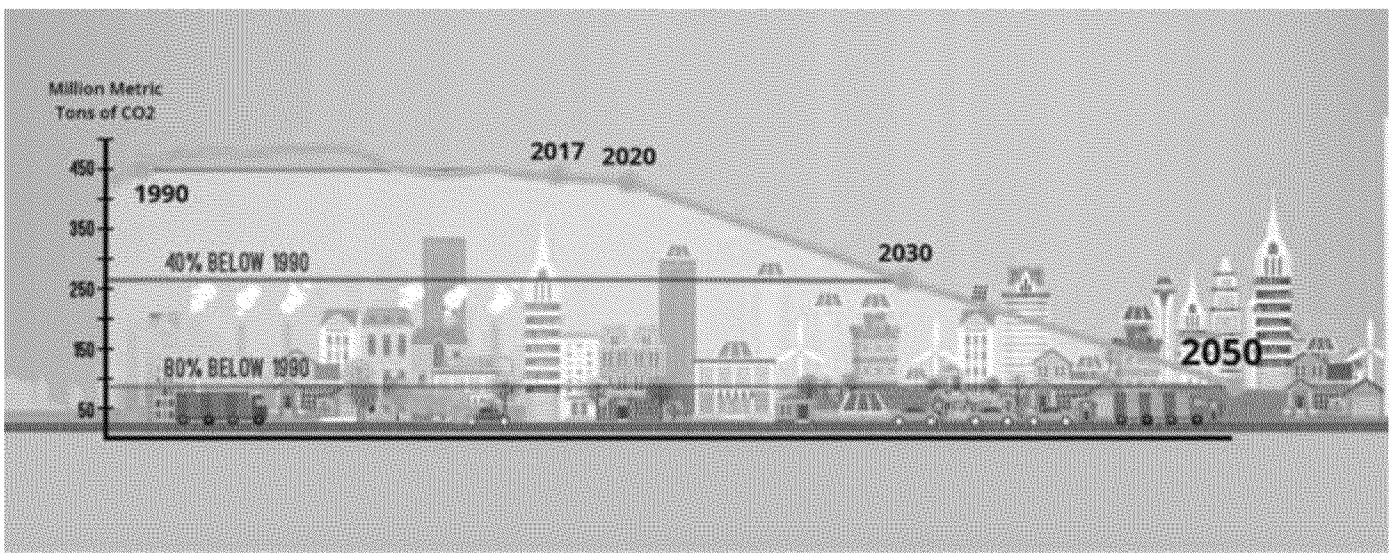
- DRP and IRP comprise a feedback loop: DER growth depends on the cost-effectiveness of DER relative to other GHG free resources, which depends on costs of grid integration of DERs, which in turn depends on DER growth
- This feedback loop makes the assessment of DER growth and cost effectiveness complex, and by necessity an iterative process
  - DRP will not inform the 2017-2018 IRP planning cycle or vice versa, but results will be for the following cycle
  - IRP guidance from the optimized portfolio is expected to flow through to policy revisions in CPUC resource proceedings, and then the IEPR forecast, before becoming new DRP DER growth scenarios
- New analysis that pulls together results of LNBA in order to understand impacts at a system level may be needed

Action Items:

- DRP to develop a plan for determining system level grid integration costs/benefits
- DRP to work with CEC to define planning assumptions for DER growth
- DRP staff to determine how optimization of DERs in future IRP cycles will impact DER growth forecasts
- DRP to identify which DERs are driving specific grid needs, so that grid planning can adjust to changing market adoption rates

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Questions?



The Clean Power and Electrification Pathway

U.S. DEPARTMENT OF ENERGY

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Energy System Resilience

36th Annual Seminar on Fuels, Power Markets and Resource Planning

Katie Jereza, Deputy Assistant Secretary

November 9, 2017

November is…

Critical Infrastructure Security and Resilience Month

ALL Americans

ACCESS

<u>Electricity underpins ALL</u>

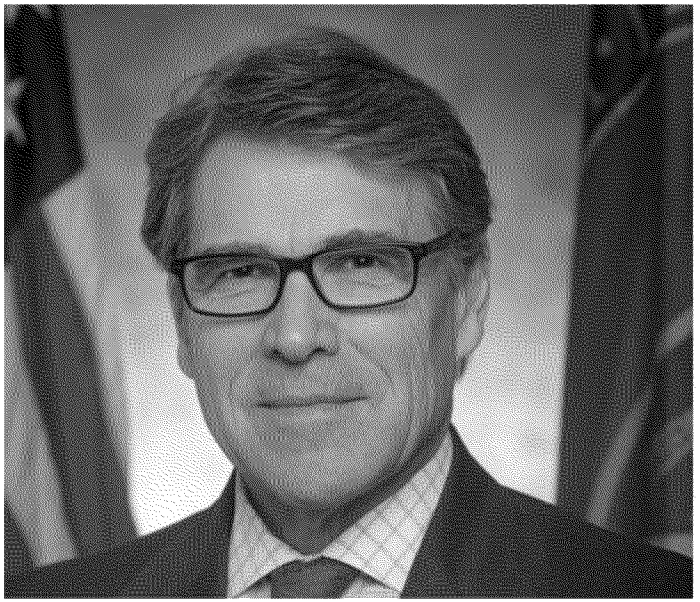
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Secretary Perry Requested a Grid Study in April 2017

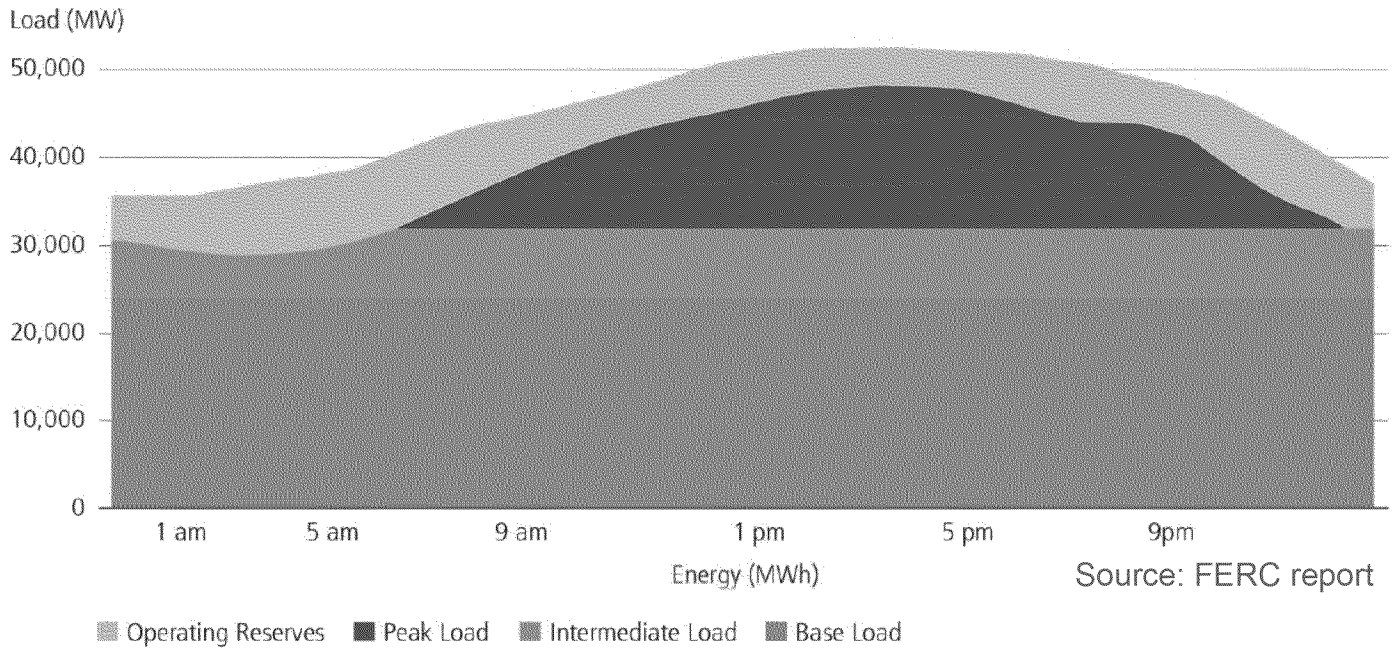
The memo asked staff to examine:

- The evolution of wholesale electricity markets
- Compensation for resilience in wholesale energy and capacity markets
- Premature baseload power plant retirements



Baseload generation: *defined by operation*

Figure 1.2. Schematic of Typical Daily Load Curve Showing Base Load[13]



Source: FERC report

<u>Baseload</u> power plants:

- High, sustained output levels
- High capacity factors
- Limited cycling or ramping

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Premature retirement: *subjective term*

- Power plant engineers
- RTO/ISO/reliability organization
- Policy maker or legislator
- Mayor or employee
- Merchant competitor
- Vertically integrated utility executive
- Nuclear or hydroelectric plant owners and regulators
- Electricity economists

Retirements: Key drivers

1. Advantaged economics of natural gas-fired generation
2. Low growth in electricity demand
3. Investments in environmental regulations
4. Dispatch of VRE

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Reliability: PJM's perspective

● = Exhibits Attribute
◐ = Partially Exhibits Attribute
○ = Does Not Exhibit Attribute

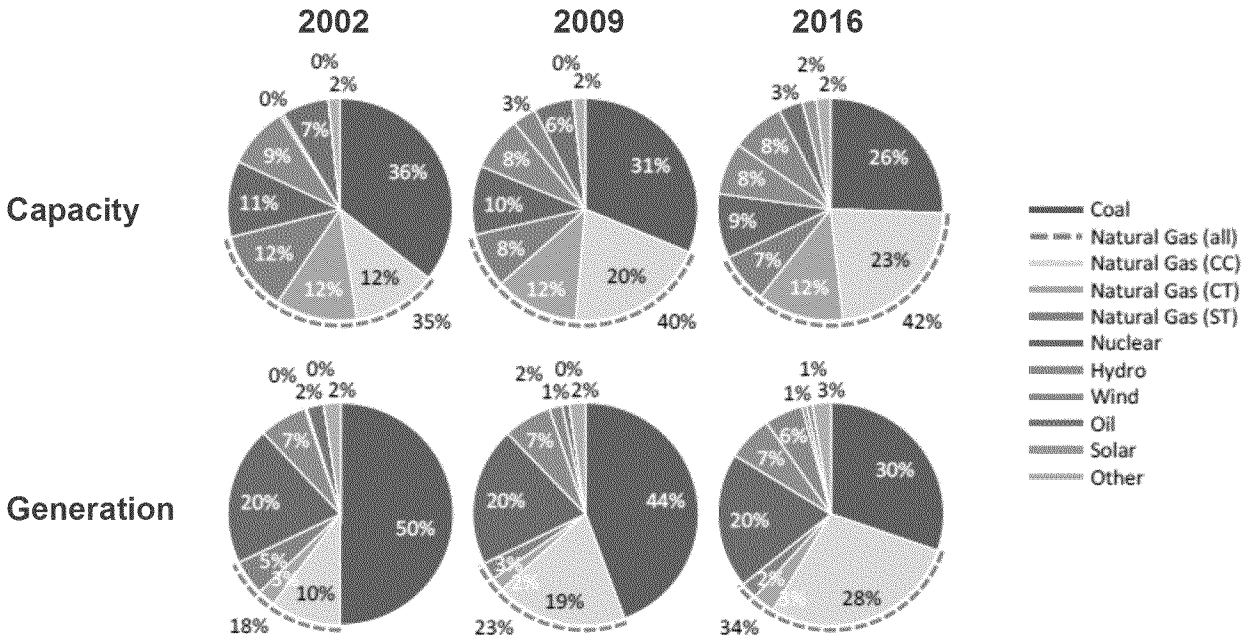
Resource Type	Essential Reliability Services (Frequency, Voltage, Ramp Capability)					Fuel Assurance		Flexibility			Other		
	Frequency Response (Inertia & Primary)	Voltage Control	Ramp										
			Regulation	Contingency Reserve	Load Following	Not Fuel Limited (> 72 hours at Eco. Max Output)	On-site Fuel Inventory	Cycle	Short Min. Run Time (< 2 hrs.)/ Multiple Starts Per Day	Startup/ Notification Time < 30 Minutes	Black Start Capable	No Environmental Restrictions (That Would Limit Run Hours)	Equivalent Availability Factor
Hydro	●	●	●	●	●	○	◐	●	●	●	●	◐	●
Natural Gas - Combustion Turbine	●	●	◐	●	◐	●	○	●	●	●	●	◐	◐
Oil -Steam	●	●	●	●	●	●	●	●	○	○	○	○	◐
Coal - Steam	●	●	●	●	●	●	●	◐	○	○	○	◐	◐
Natural Gas - Steam	●	●	●	●	●	●	○	●	○	○	●	◐	◐
Oil/ Diesel - Combustion Turbine	●	●	○	●	○	○	●	●	●	●	●	○	◐
Nuclear	◐	●	○	○	◐	●	●	○	○	○	○	◐	●
Battery/ Storage	◐	◐	●	●	○	○	○	●	●	●	◐	●	●
Demand Response	○	○	◐	◐	◐	◐	◐	●	●	◐	○	●	●
Solar	◐	◐	○	○	◐	○	○	●	●	●	○	●	●
Wind	◐	◐	○	○	◐	○	○	●	●	●	○	◐	●

- **PJM: determine how different resources can provide ERS**
- **More work is needed to fully define, value, procure, and compensate ERS**

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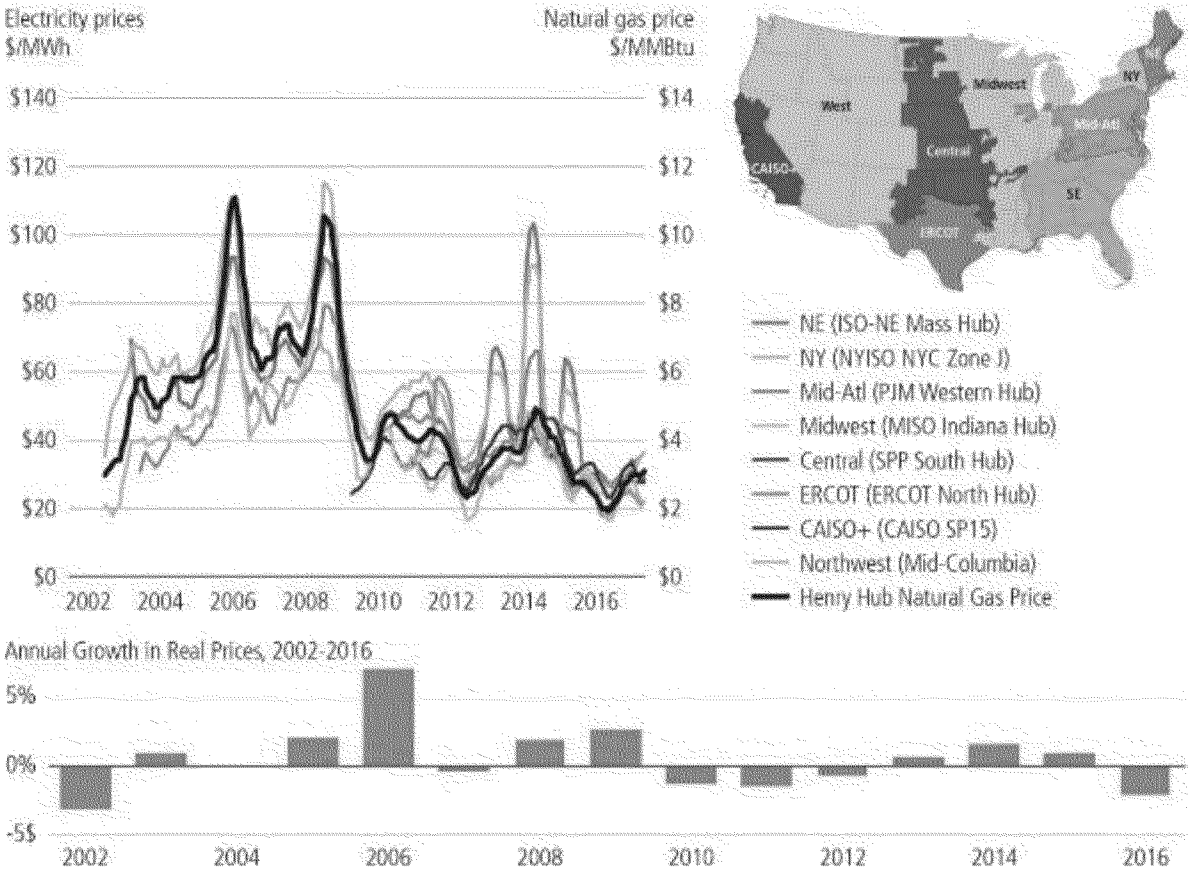
Reliability vs. Resilience



PJM simulation: when 98 *reliable* portfolios were subjected to a polar vortex event, only 34 were also *resilient*

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Affordability



- **Wholesale-retail disconnect**
- **Limited work done to-date on the affordability of the BPS as a system or portfolio**

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Policy recommendations

Department of Energy

- Support industry efforts and focus R&D to enhance system resilience (for example, OE awards)
- Accelerate and reduce costs for re/licensing and permitting
- Facilitate programs for workforce development
- Prioritize energy dominance and EO 13783
- Increase coordination of electric and natural gas industries

Federal Energy Regulatory Commission (FERC)

- Expedite efforts to reform energy price formation
- Value new/existing essential reliability services

Environmental Protection Agency (EPA)

- Allow coal-fired power plants to improve efficiency and reliability without triggering new regulatory approvals and associated costs

Nuclear Regulatory Commission (NRC)

- Revisit nuclear safety rules
- Ensure safety without unnecessarily adding costs

Areas for further research

Market Structure and Pricing	Reliability and Resilience	Cost and Affordability	Regulatory
Study mechanisms to enable equitable, value- based remuneration for desired grid attributes	Develop policy metrics and tools for evaluating system-wide provision of these attributes	Estimate system-wide costs of different generation mixes and sensitivities to fuel price fluctuations	Explore potential to utilize existing authorities to ensure system reliability and resilience
Evaluate ongoing capacity market reforms	Examine ways to improve power generator fuel delivery data collection	Update analysis of subsidies and support for electricity production	Explore costs and benefits of states applying cost-of-service regulation to at-risk plants

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Electricity Underpins All Infrastructures

Moving forward…

Be proactive

Cultivate an ecosystem

Reliable, affordable, resilient energy

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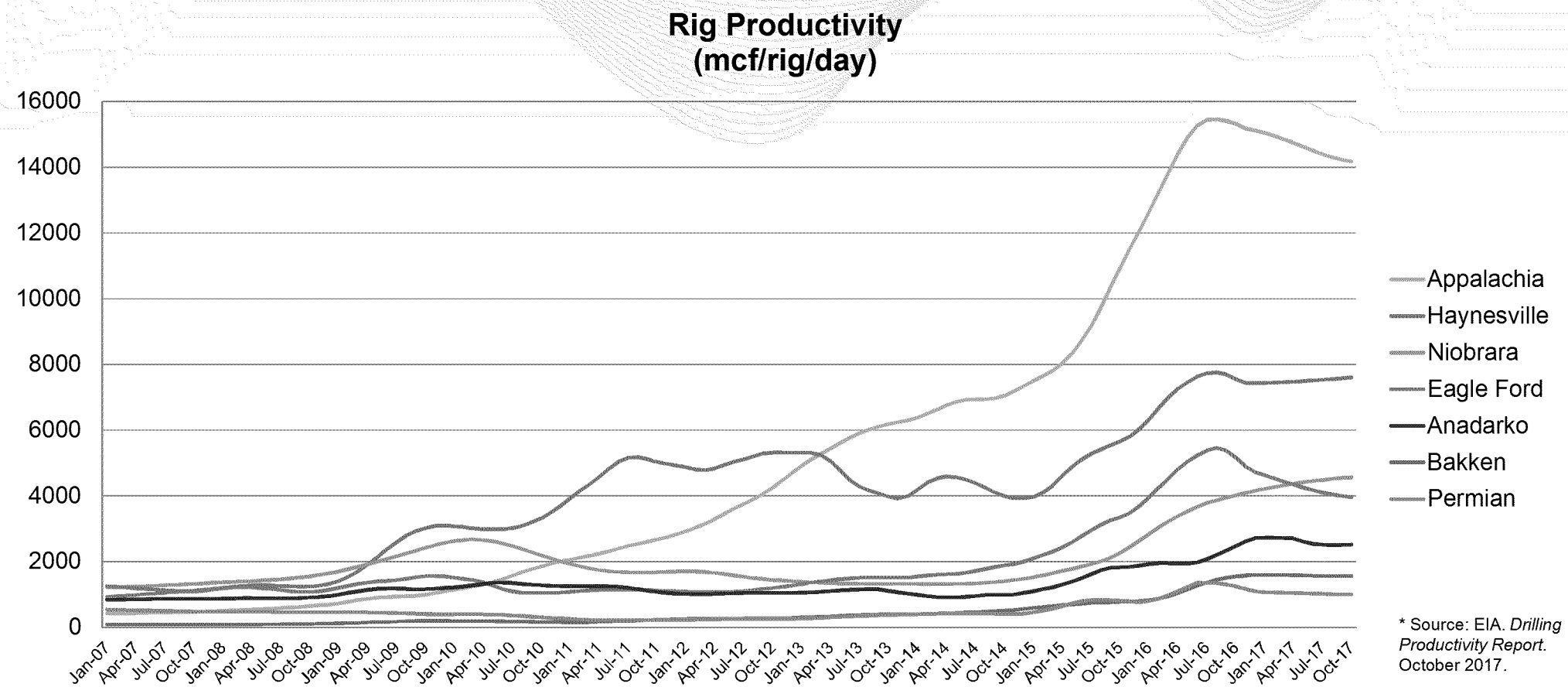
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PJM's Evolving Resource Mix and System Reliability

M. Gary Helm
Natalie Tacka

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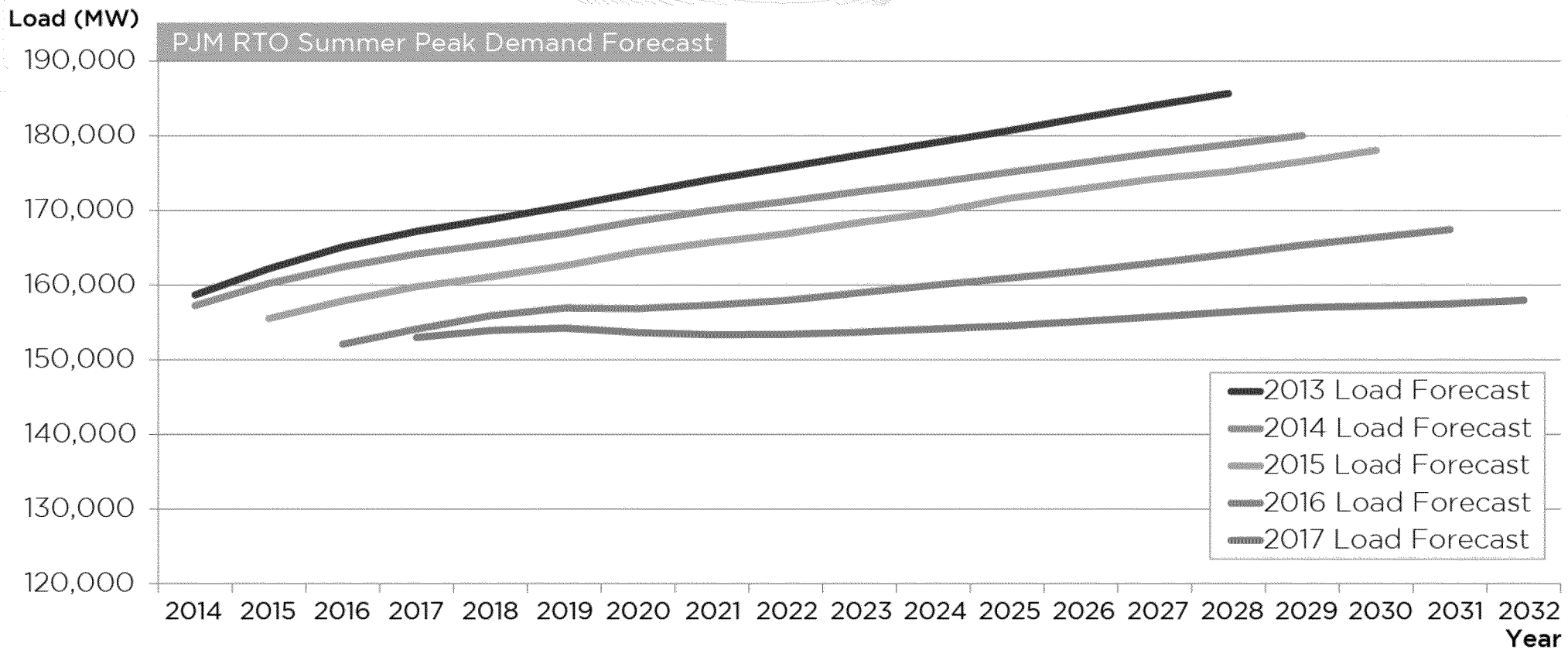
Main Driver: Natural Gas



* Source: EIA. *Drilling Productivity Report*. October 2017.

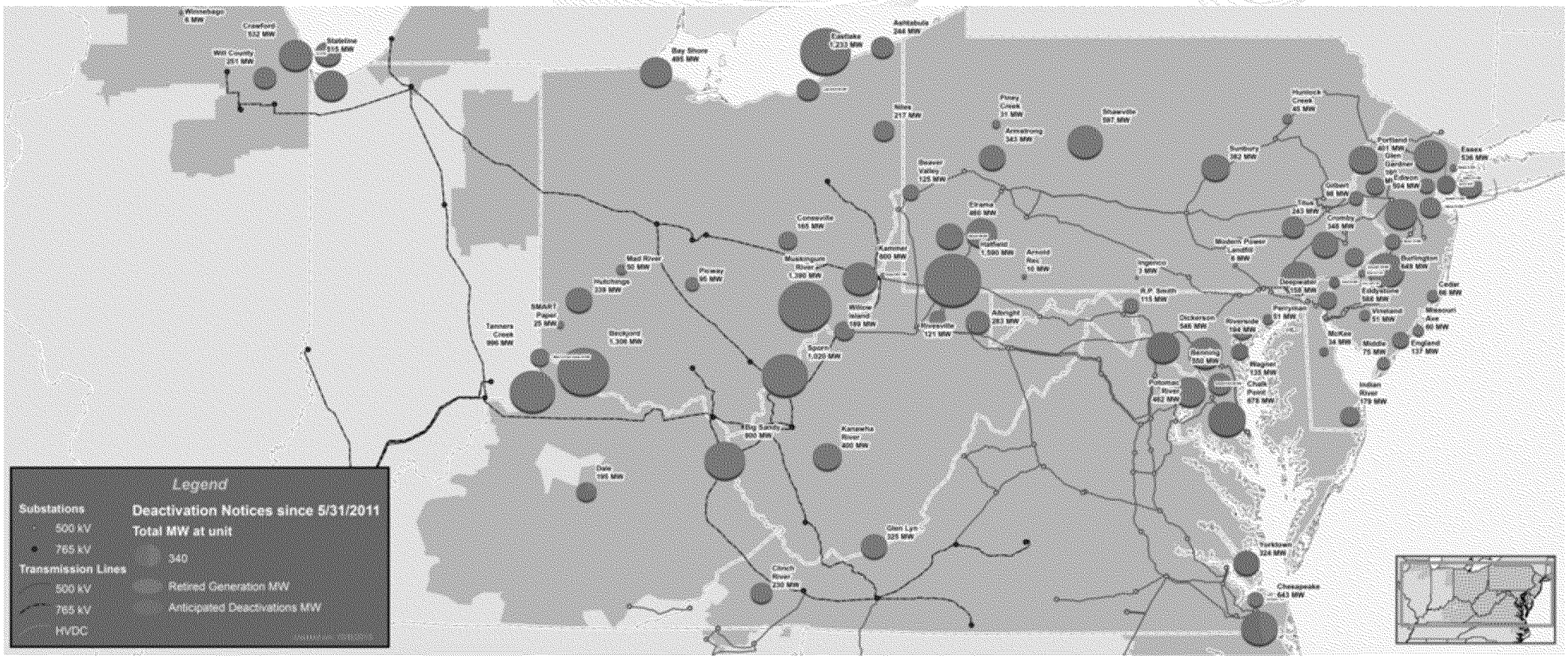
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Declining Electricity Demand Growth



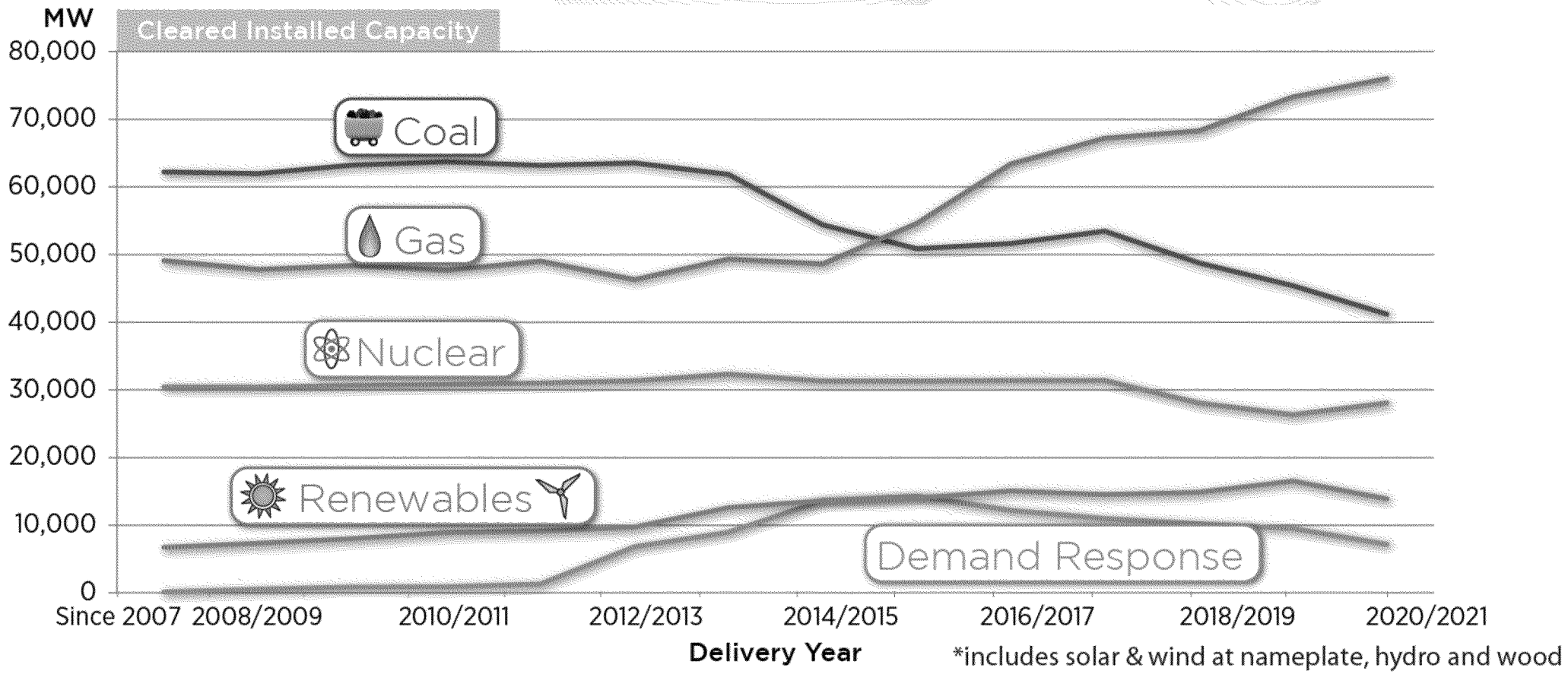
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Generation Retirements



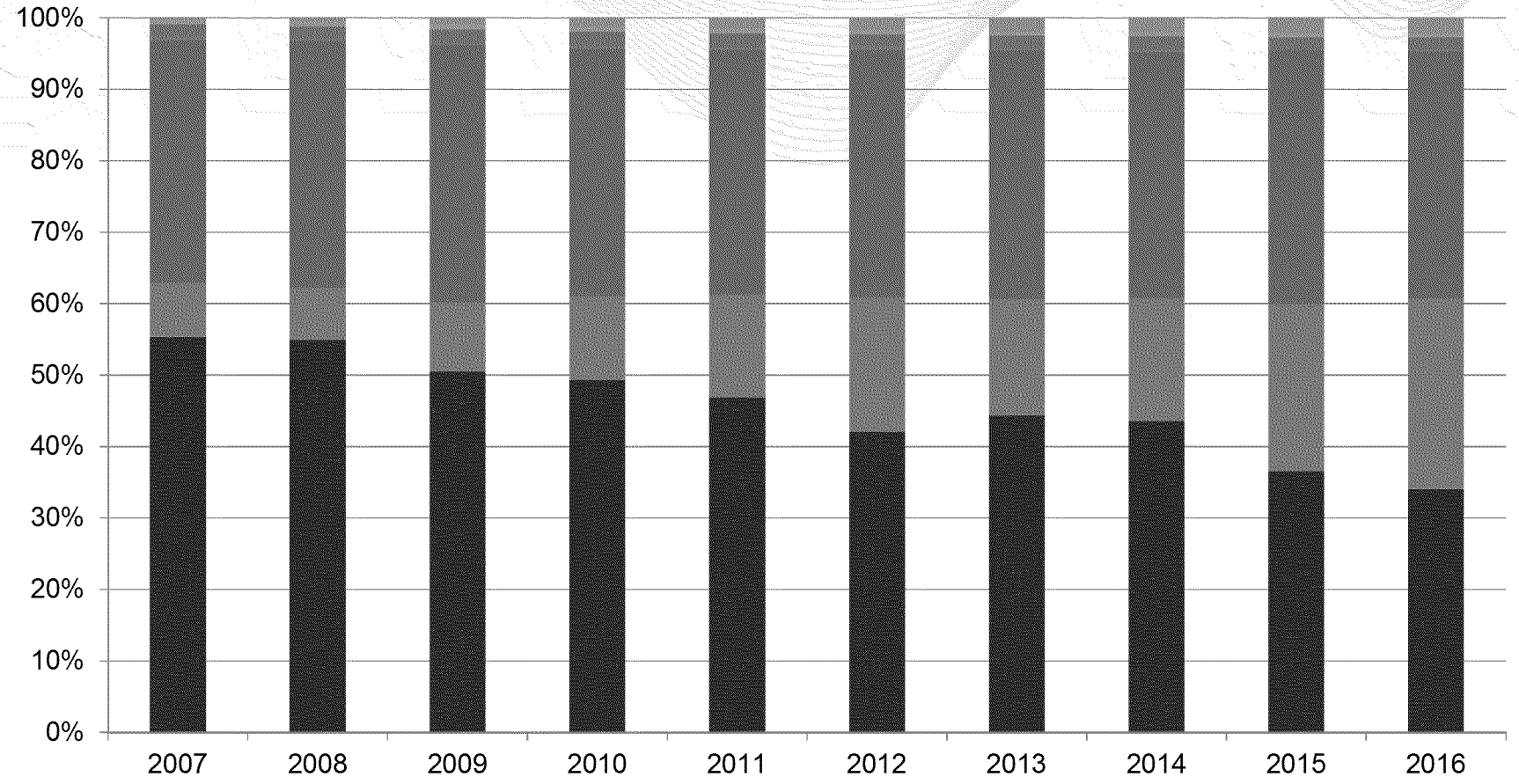
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Capacity Market Results



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Changing Energy Market Trends



* Source: Monitoring Analytics, LLC. *2016 State of the Market Report for PJM*. Mar. 9, 2017.

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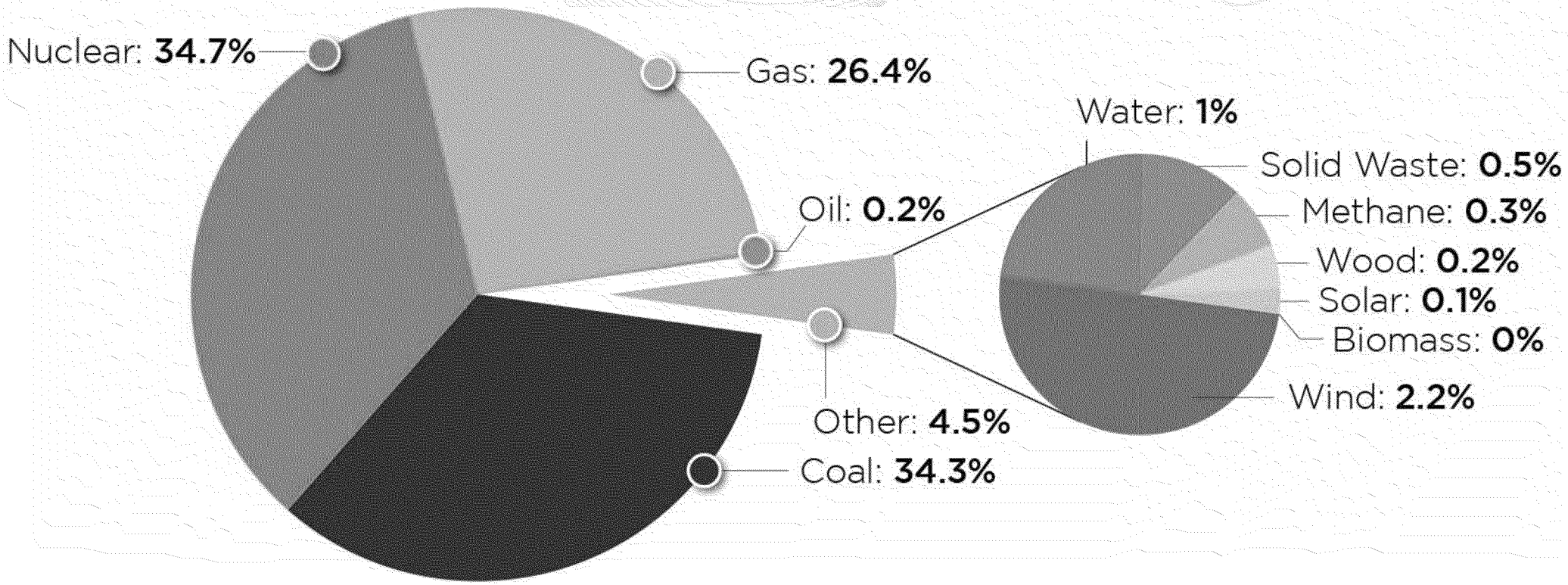
Focus

- Define resource diversity
- Define reliability attributes and measure capabilities of different resource types to provide these attributes
- Analyze resource diversity trajectory and potential impacts on reliability

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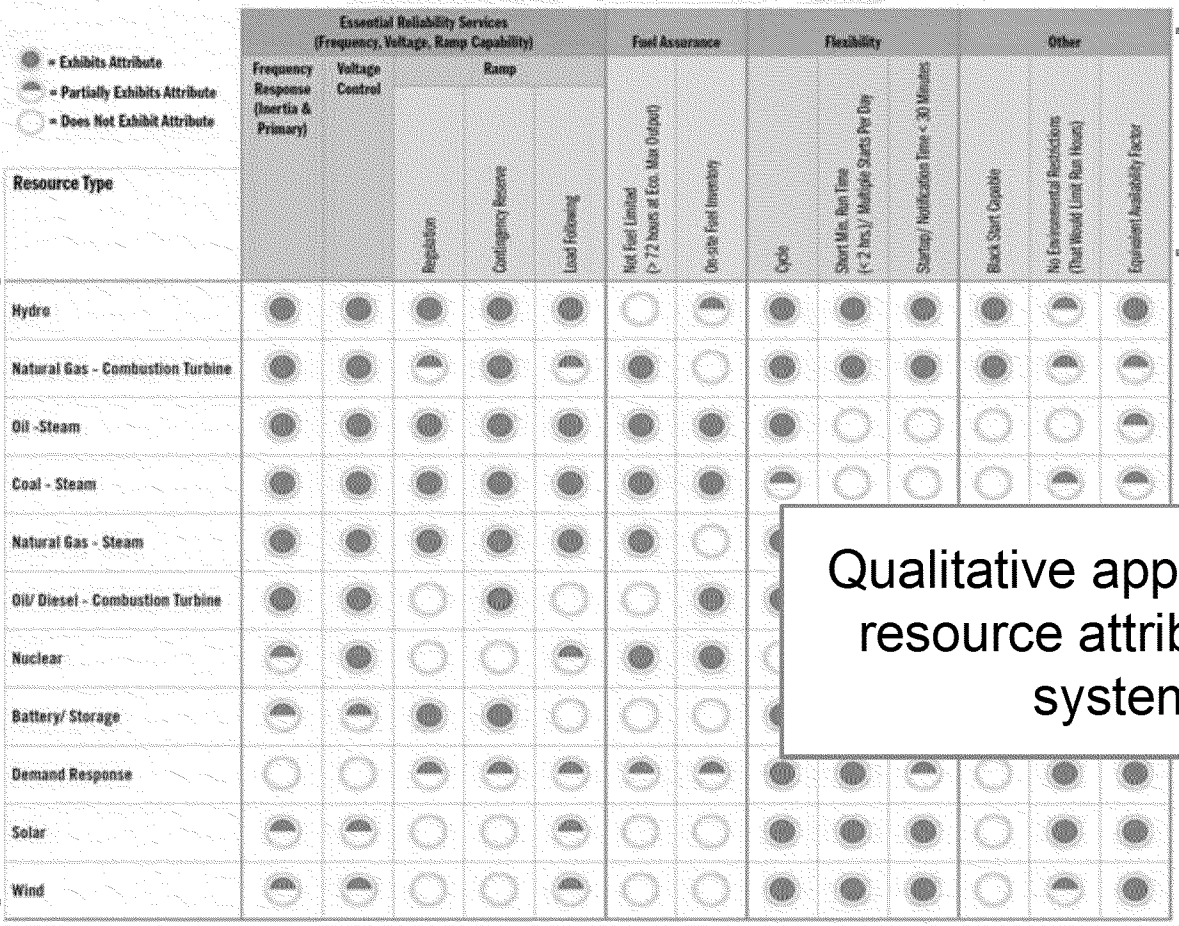
Variety & Balance



(% Annual Energy)

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Essential Reliability Attributes



Capabilities needed by the grid to ensure reliability

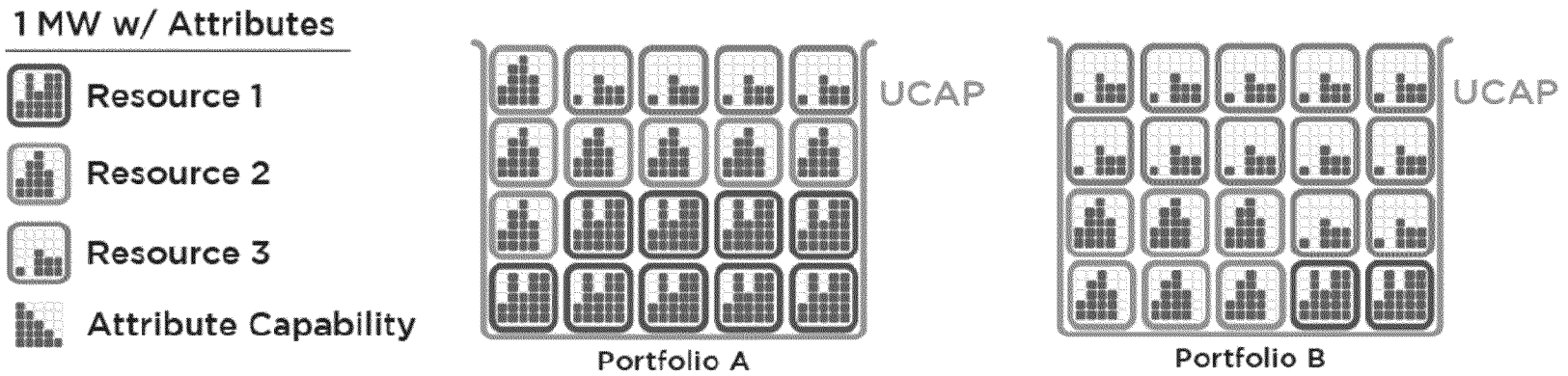
Contribution of each resource type to a particular attribute

Qualitative approach to describing resource attributes essential for system reliability

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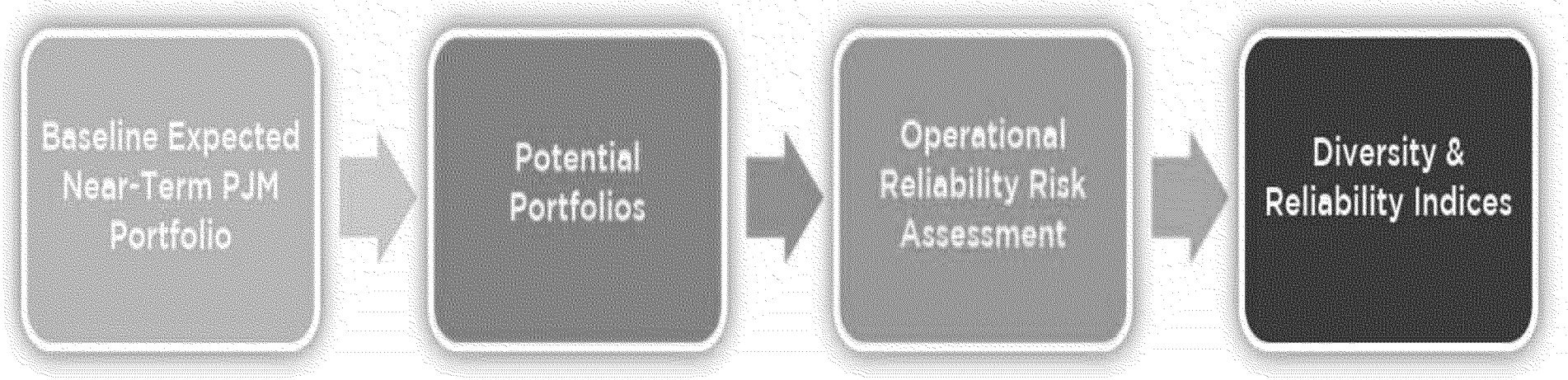
Specific Reliability Attributes

Different resource types have different operational characteristics that aid in maintaining system reliability



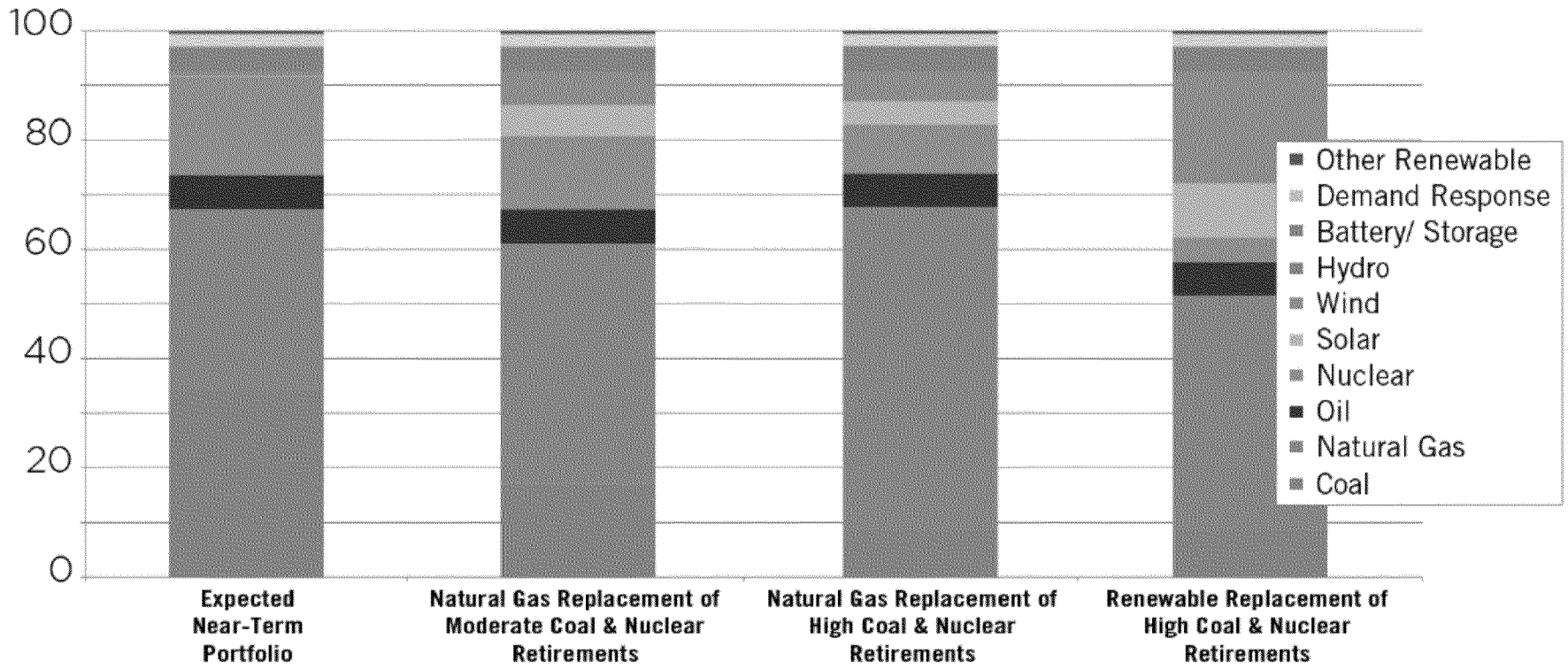
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Approach



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Establish Portfolios

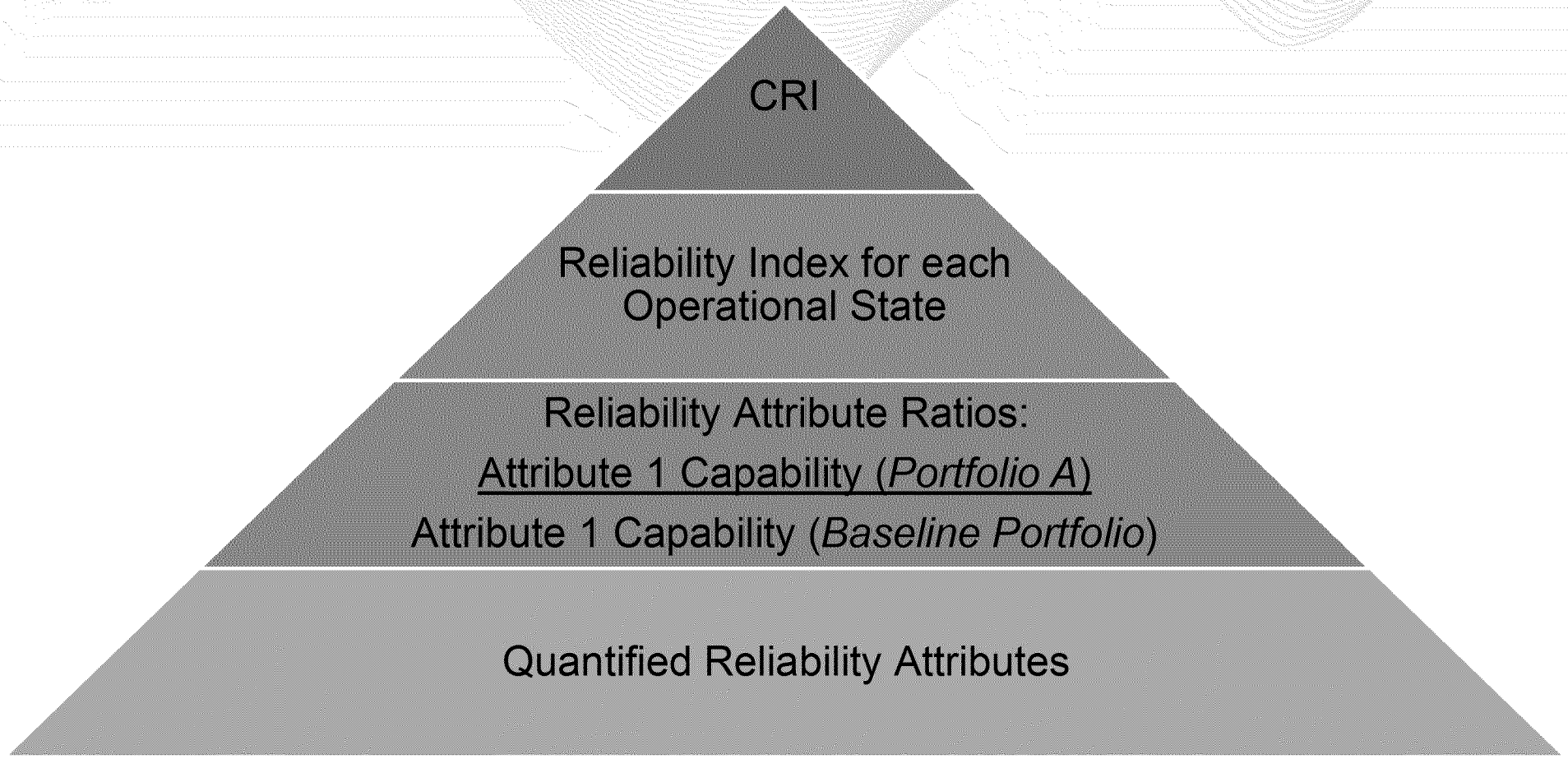


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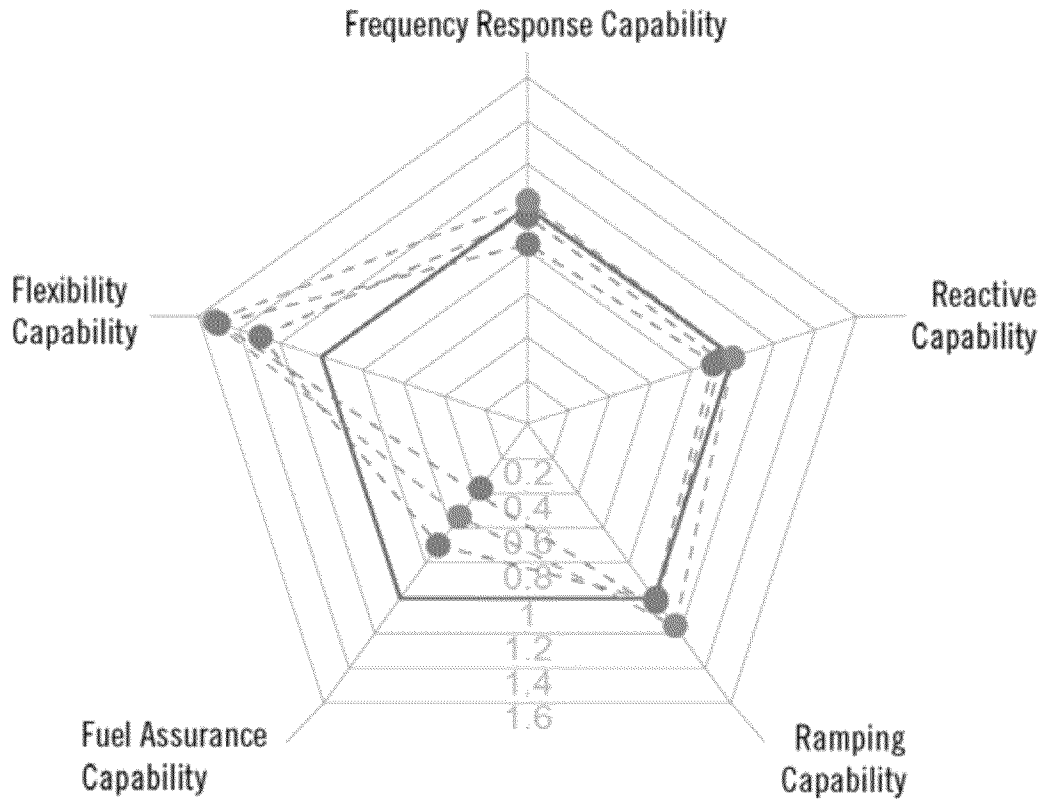
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Composite Reliability Attribute



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Findings - Reliability Attribute Capability

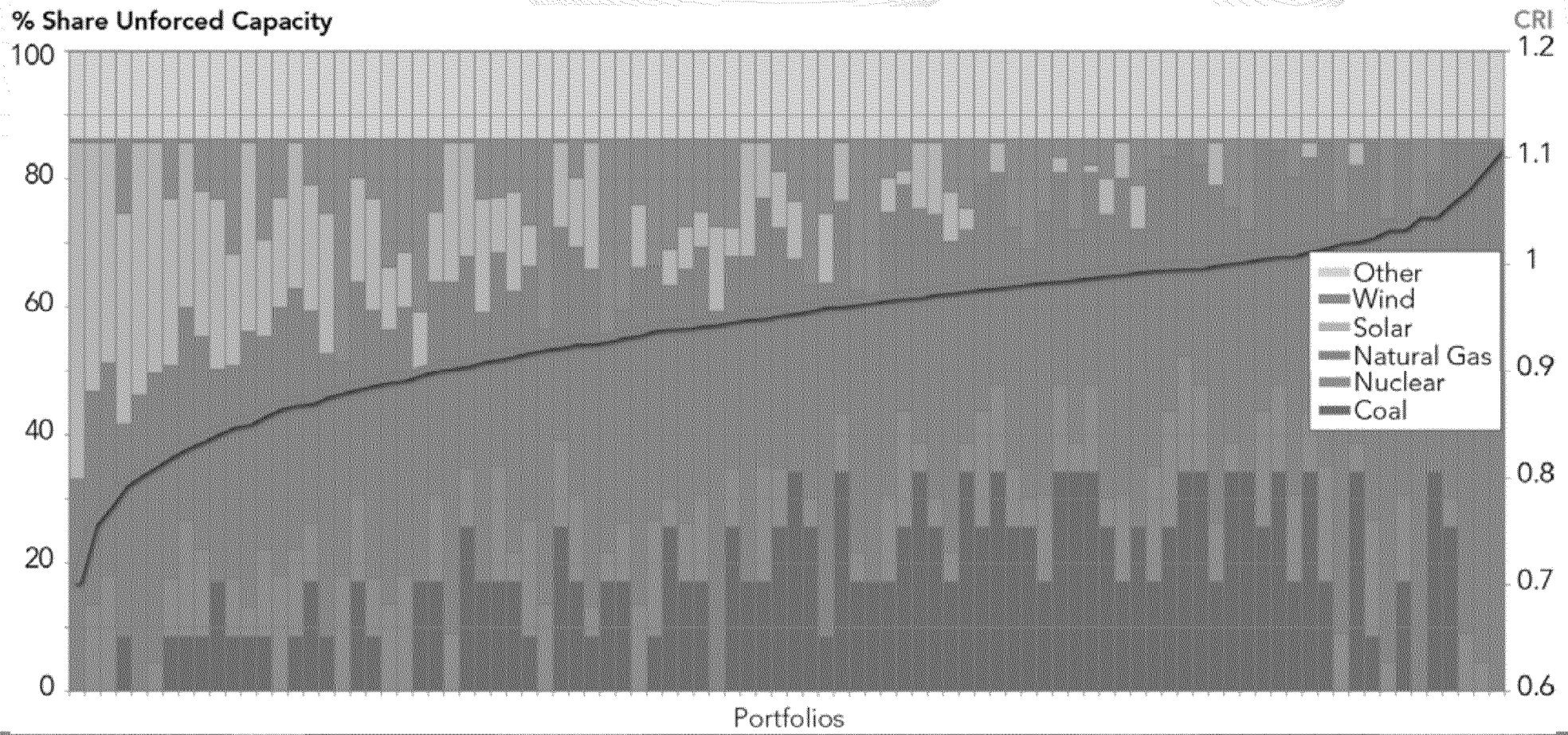


- Expected Near-Term Portfolio
- Natural Gas Replacement of Moderate Coal & Nuclear Retirements
- Natural Gas Replacement of High Coal & Nuclear Retirements
- Renewable Replacement of High Coal & Nuclear Retirements

Illustrative Future Portfolios

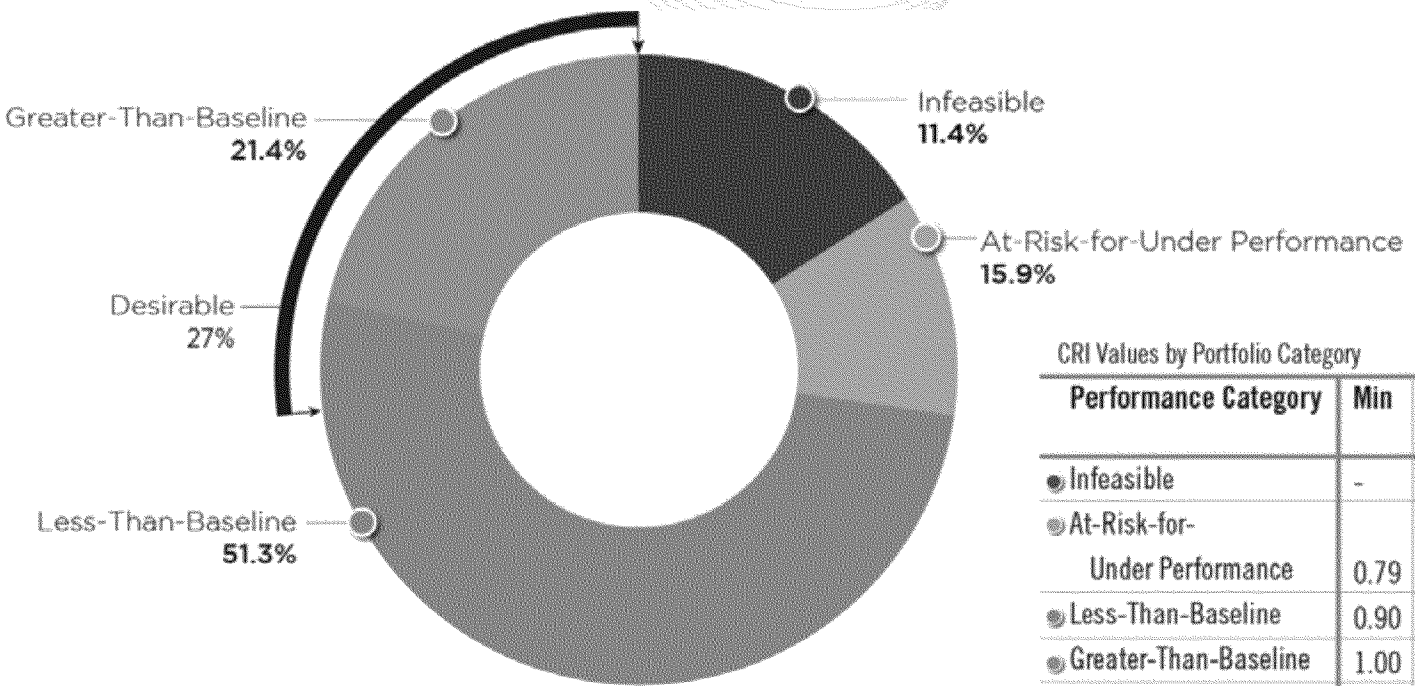
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Findings – Reliability Index



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Distribution of Results

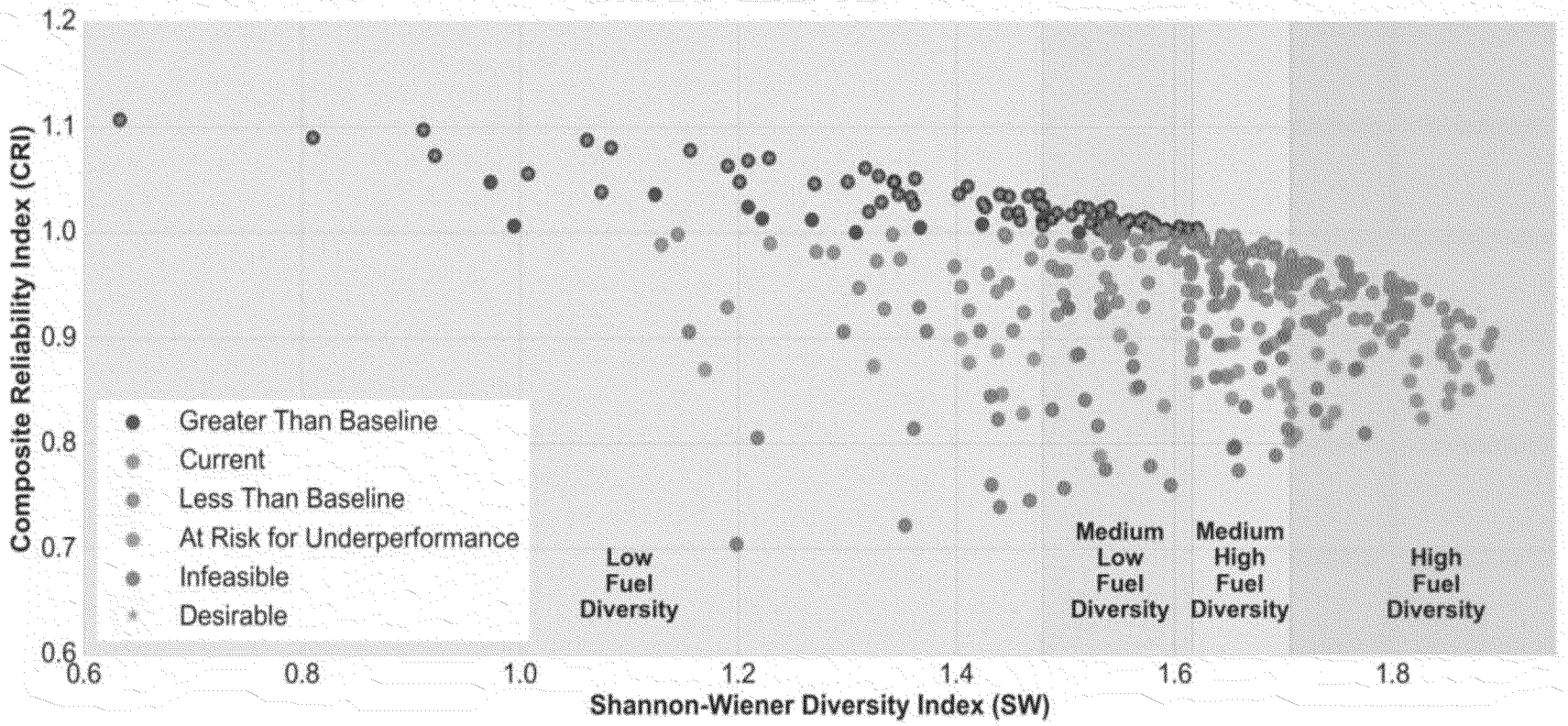


CRI Values by Portfolio Category

Performance Category	Min	Max	LOLE Criterion
Infeasible	-	-	Failed
At-Risk-for-Under Performance	0.79	0.90	Met
Less-Than-Baseline	0.90	0.99	Met
Greater-Than-Baseline	1.00	1.11	Met
Desirable	0.95	1.11	Met

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Findings - Impact of Diversity



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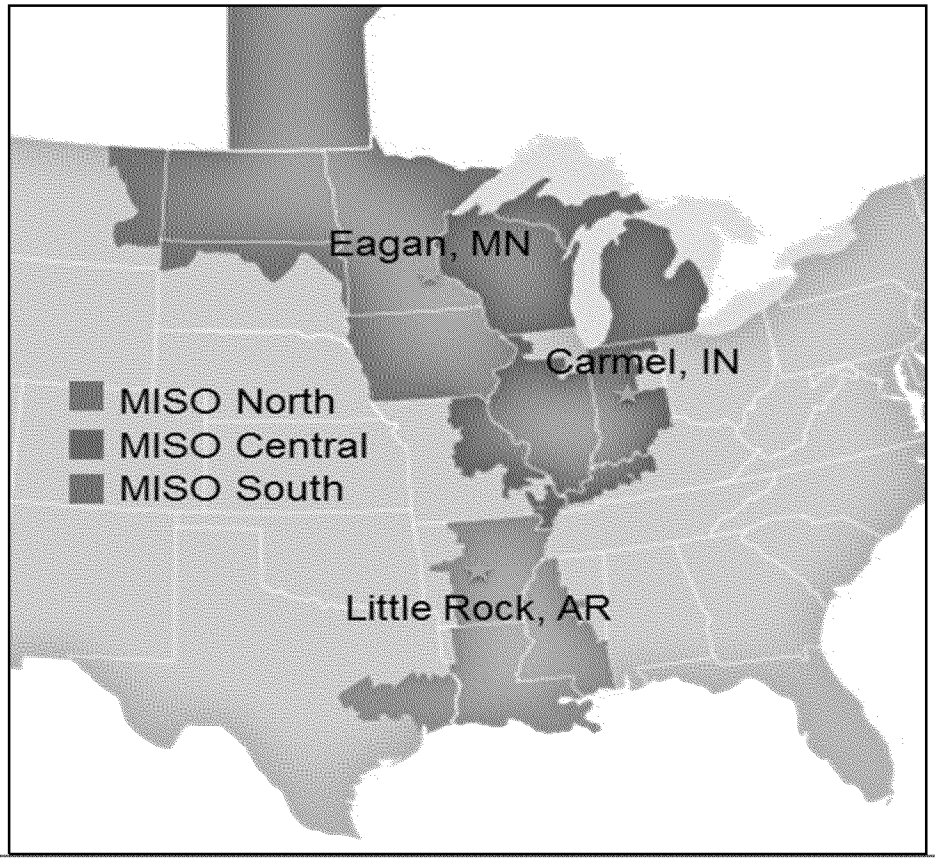
Incentivizing System Reliability and Resilience in the Wholesale Power Market

Derek Bandera, Executive Director, Federal Regulatory Affairs

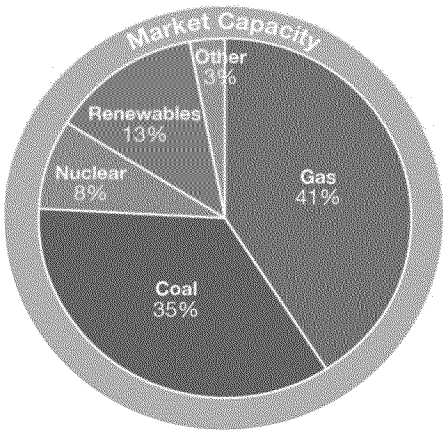
November 9th, 2017

MISO drives value creation through efficient and reliable markets, operations, planning, and innovation

The most reliable, value-creating RTO



MISO by-the-numbers	
High Voltage Transmission	65,800 miles
Generation Capacity	174,000 MW
Peak Summer System Demand	127,125 MW
Customers Served	42 Million



https://www.misoenergy.org/AboutUs/LeadershipGovernance/PublishingImages/Corporate%20Fact%20Sheet.jpg

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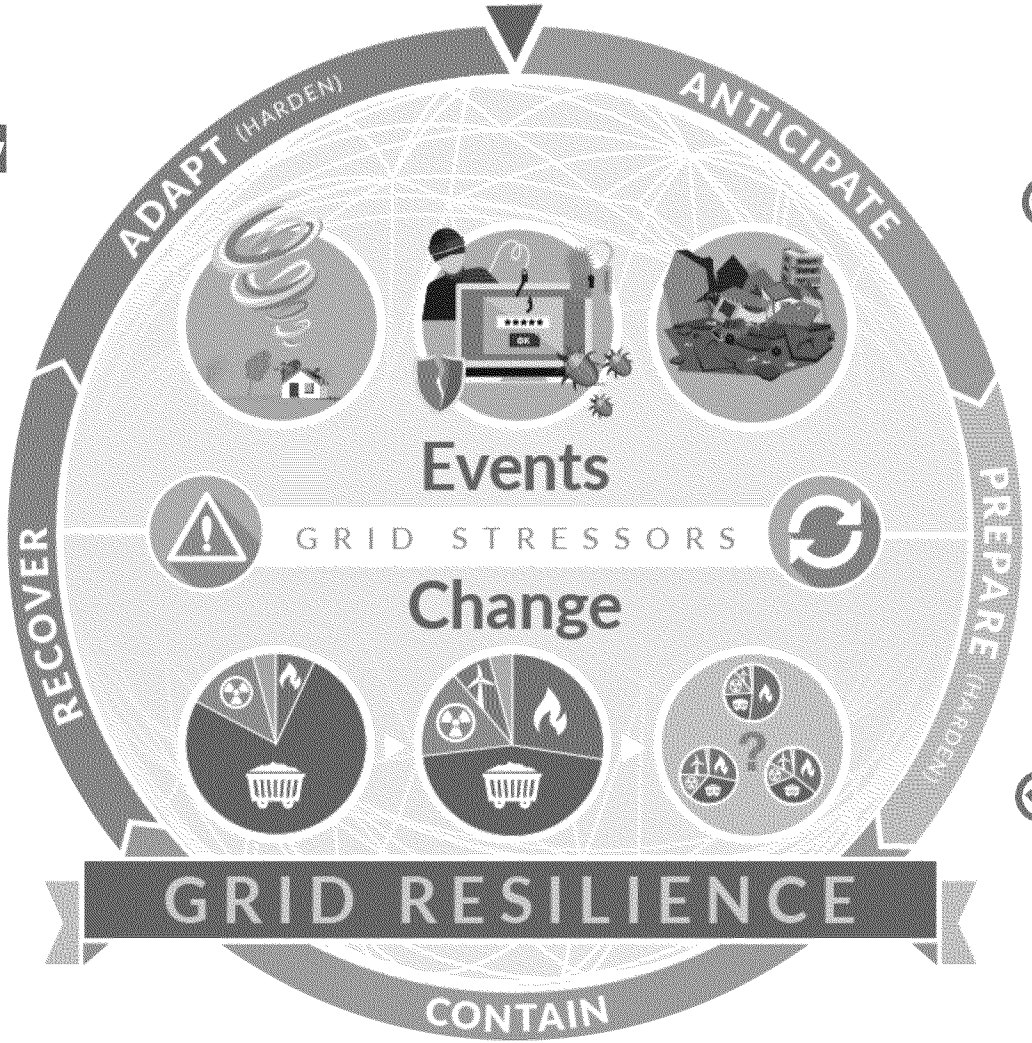
MISO's resilience efforts address all stages of an event, and a variety of grid stressors

Technology and Security

- Maturing identification, protection, detection and response capabilities

Operations

- Improving the ability to anticipate, contain, and recover



Markets

- Operating efficient markets that incent and coordinate resilient outcomes

System Planning

- Enhancing planning criteria to ensure a reliable, flexible transmission system

- Draws upon Department of Energy, North American Electric Reliability Corporation, and National Academy of Engineering efforts related to resilience
- The term "Electric Grid" is the interconnected network for delivering electricity and includes the generation, transmission, and distribution systems, as well as the NERC registered Functional Entities
- Definition expanded to include grid stressors such as change related to portfolio evolution and increasing complexity

MISO

MISO is prepared for and managing threats driven by events as well as changes

Events

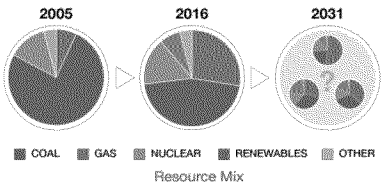


Examples include:

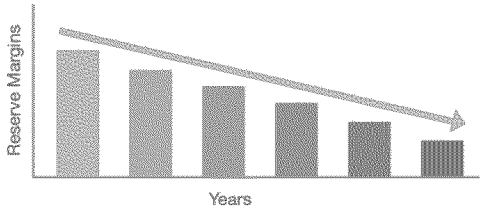
- Natural events and weather events
- Blackouts and major outages
- Cyber and physical attacks / threats
- Disruptions to related infrastructure (communications, fuel supply, transportation, water, waste-water, other)

Change

Changing resource mix



Lower reserve margins



Examples include:

- Changing baseload resources, renewables, and grid topology
- Tightened reserve margins and importance of resource availability and system flexibility
  - Scarcity now seen in shoulder seasons
  - More supply variability with increased renewables
- New resource technologies – DER, storage, etc.
- Fuel supply and delivery vulnerabilities
- Increasing complexity - higher end-to-end interaction and interdependence (generation, transmission, distribution, and consumer)

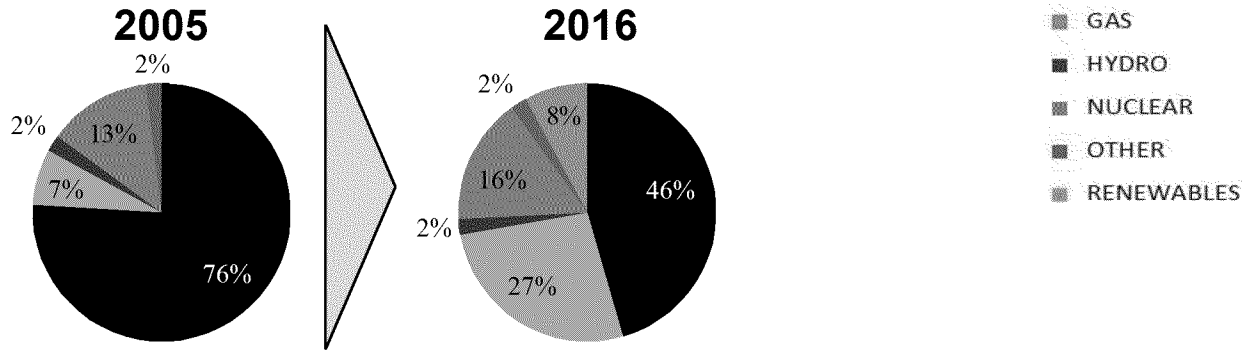
MISO

MISO is working to improve Grid Resilience

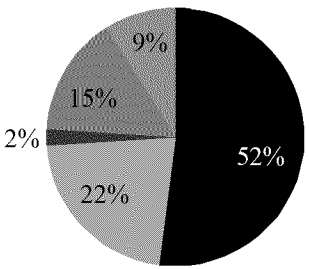
	Technology and Security	Markets	System Planning	Operations
	Maturing identification, protection, detection and response capabilities	Operating efficient markets that incent and coordinate resilient outcomes	Enhancing planning criteria to ensure a reliable, flexible transmission system	Improving the ability to anticipate, withstand, and recover
Implemented	• Vulnerability identification • Communication resiliency evaluation • Risk-based approach appropriate to the critical nature of MISO's technology and security	• Market Roadmap for an evolving portfolio (e.g. ramp product for short-term fluctuations in energy requirements) • Improved scarcity pricing and emergency pricing • Enhancements to market-to-market and coordinated transaction scheduling	• Long-term planning for robustness across multiple future scenarios, incorporating uncertainty • Evaluating system robustness through a Renewable Integration Impact Assessment • Increasing stakeholder awareness of impact of low frequency / high impact events	• Improved situational awareness with disaster preparedness and operating guides • Improved Gas-Electric Coordination (including winterization guidelines) • Drills – cyber-attacks, control room evacuation, system failure, seasonal readiness, restoration plans, Load Modifying Resource (LMR) and Emergency Demand Response (EDR)
Planned	• Mature identification, protection, detection and response capabilities • Focus on resiliency and recovery agility • Collaborate to strengthen security and raise vigilance with our employees, members, and governmental entities • Industry event participation (Grid-EX IV)	• Market System Enhancement - Developing architectural standards with innate resilience • Market Roadmap – Multiday Unit Commitment, Combined Cycle Modeling, Short-term Capacity Reserves, Stored Energy	• Defining planning resiliency metrics and their associated values based upon impact analysis and stakeholder input • Enhanced planning to address reliable portfolio evolution • Enhanced planning to incorporate resiliency metrics	• Implement alternatives for balancing during extended outages • Resource Availability and Need (including Fuel Assurance) • Stakeholder training simulator expansion for extreme events (Loss of multiple units, islanding) • Advances in parallel flow visualization

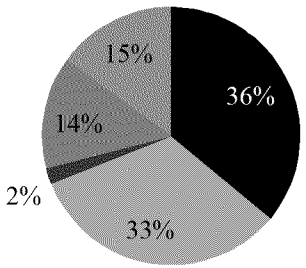
MISO's generation portfolio changed significantly in the past decade, and MISO is planning for several different future scenarios

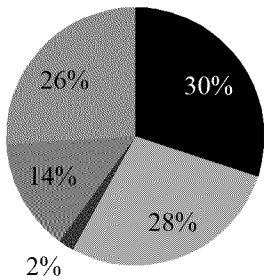
MISO Generation Portfolio Evolution



2031 Future Scenarios







Existing Fleet
No carbon regulations modeled but some reductions expected due to RPS and economics.

Policy Regulation
Carbon regulations targeting a 25% reduction across all aggregated unit outputs are enacted.

Accelerated Technology
Increase in carbon emissions results in carbon regulations targeting a 35% reduction across all aggregated unit outputs to be enacted.

MISO

MISO's markets changed alongside the generation portfolio to incentivize units capable of supporting resilience and reliability in diverse ways

Ramp Product May 2016	• Provides transparent price signals to help manage ramp constraints that could lead to short-term reserve scarcity events
Extended Locational Marginal Pricing Phase II May 2017	• Expands the criteria of online fast-start resources from 100 minutes start-up/notification to 60 minutes
Scarcity Pricing	• Signals market that MISO is anticipating shortage while procuring the product at an administratively determined price
Emergency Pricing Phase II Jul 2017	• Off-line fast start resources amortized over minimum run time • Available Maximum Emergency units allowed to move down below their Economic Minimum limits

17cv01906 Sierra Club v. EPA

ED_001523_00006051-00007

MISO continues to work with stakeholders to develop market enhancements that properly value both new and legacy resources

Market System Enhancement	• The Market System Enhancement program will develop and implement the necessary strategic investments in our market systems to allow us to meet the evolving needs of our customers in the future.
Multiday Unit Commitment	• This project will explore potential improvements in economic scheduling over a longer time horizon than MISO's current Day-Ahead Market.
Combined Cycle Modeling	• This project provides a mechanism to allow combined cycle generator to offer in more than one unit configuration, along with associated costs, on an hourly basis—allowing for the hourly selection of the most economical configuration.
Short-Term Capacity Reserves	• This project explores options that ensure short-term capacity availability to address local and system-wide requirements.
Stored Energy	• Multiple Market Road Map projects would address storage aggregation, and new storage resources.

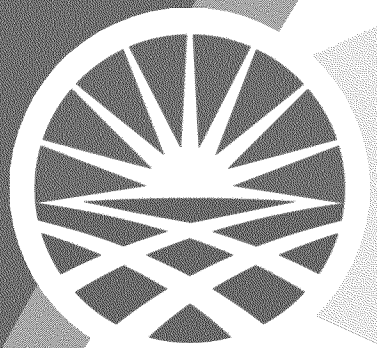
17cv01906 Sierra Club v. EPA ED_001523_00006051-00008

Conclusion

- MISO's markets achieve economic efficiency, while supporting reliable operations
- MISO is accelerating planned market efforts to improve resilience and address resource portfolio evolution
- Current and planned market enhancements position MISO to continue to support reliable, resilient operations

17cv01906 Sierra Club v. EPA

ED_001523_00006051-00009



Questions?

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Beth Rath
Sent: Mon 11/13/2017 4:57:08 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Beth Rath
715 S.Scott Street
Wilmington, DE 19805

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Cisco
Sent: Wed 11/8/2017 11:02:30 PM
Subject: What's happening at Cisco

If you are having trouble reading this email, read the online version.

Dear SAMANTHA,

Every day so many things happen at Cisco that change the way we work, live, play and learn. We want you to stay on top of these developments so you have the tools and knowledge to transform your business. As a Cisco customer we would like to contact you so that we can:

- Deliver products and services that may interest you
- Provide you timely, customized offers
- Make recommendations to you to improve your customer experience

Your contact information will also help us identify and anticipate your needs before reaching out to you, either directly or through our trusted partners. Of course, we will always respect your choices regarding the use and disclosure of your personal information.

If you would like to unsubscribe, please click on the link provided below.

Sincerely,
Cisco Systems

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Sent by Cisco on behalf of your local affiliate: Cisco Systems, Inc. 170 West Tasman Drive, San Jose, California 95134 ATTN: Corporate Marketing (SJC08/3/4)

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Scientific Integrity Whistleblower Project
Sent: Thur 11/2/2017 10:38:01 AM
Subject: How we protect scientific integrity

Samantha,

Scientific integrity is the foundation of our government's scientific research and achievement. For decades, the thousands of US Government scientists at agencies like the EPA, NASA, NSF and many others were free to follow the facts where they led. From cleaning up our nation's air and water to predicting hurricane paths and conducting basic scientific research, our government scientists have helped increase our economic productivity, quality of life and save lives.

Although Republican and Democratic administrations may have disagreed on how to incorporate scientific findings into the policy arena, government scientists were free to publish and share their findings with other scientists and the public at large free from political interference. Unfortunately, the current administration has chosen to engage in an all-out war on science.

Before inauguration day, President Trump's transition team requested the names of staffers who worked on climate change initiatives.[1] In March, an office within the Department of Interior banned staff from using the phrases "climate change" and "Paris Agreement" in agency communications.[2] Interior Secretary Ryan Zinke even went so far as to accuse more than a third of his workforce as being "not loyal to the flag".[3] Just last week the EPA barred three scientists from speaking about climate change at a conference.[4] The list goes on and on.

All of this led to the administration being charged with "creating a hostile environment for federal agency scientists".[5] That's why today, 314 Action, a nationwide pro-science nonprofit with a membership of nearly a quarter of a million scientists and pro-science advocates from all over the country is launching the **Scientific Integrity Whistleblower Project (www.speakoutforscience.org)** to shine a light on scientific wrongdoing in this administration.

The **Scientific Integrity Whistleblower Project** (**www.speakoutforscience.org**) allows government scientists or others who have witnessed malfeasance, science being silenced or other evidence of this administration's war on science to anonymously and securely provide details and evidence directly to one of our attorneys. Please visit our website at **www.speakoutforscience.org** to see all the methods in which you can securely and anonymously share messages and files with our attorneys. In addition, our attorneys will be available to answer calls starting this next week Tuesday, November 7, 2017 from 11:00 a.m.-2:00 p.m. We ask that you do not contact our attorneys when you are at work or when you are on duty, and plan to provide additional hours for our attorney hotline in the future.

Our lawyers at Garvey Schubert Barer have asked us to let you know that the law generally provides whistleblower protections for government scientists who challenge censorship or make disclosures related to the integrity of the scientific process. In particular, the law protects disclosures of information that an employee reasonably believes are evidence of censorship related to research, analysis, or technical information that cause, or will cause, gross government waste or mismanagement, an abuse of authority, a substantial and specific danger to public health or safety, or any violation of law. You should consult the EPA's website for additional information about whistleblower protections at the EPA and how they relate to non-disclosure agreements signed by EPA employees.[6] **Please do not submit any information if doing so would violate any law, rule or regulation.**

Speaking out in this climate can be a difficult decision, but recently some have finally started to shed a light on scientific wrongdoing. Winning the war on science isn't about politics, it's about putting our country first. Speak up. Speak out.

Sincerely,

Scientific Integrity Whistleblower Project

[1] https://www.washingtonpost.com/news/energy-environment/wp/2016/12/09/trump-transition-team-for-energy-department-seeks-names-of-employees-involved-in-climate-meetings

[2] https://www.politico.com/story/2017/03/energy-department-climate-change-phrases-banned-236655

[3] https://www.washingtonpost.com/news/energy-environment/wp/2017/09/26/zinke-says-a-third-of-interiors-staff-is-disloyal-to-trump-and-promises-huge-changes

[4] https://www.nytimes.com/2017/10/22/climate/epa-scientists.html

[5] https://www.washingtonpost.com/news/powerpost/wp/2017/07/25/has-trump-sidelined-restricted-government-scientists-yes

[6] https://www.epa.gov/ocr/whistleblower-protections-epa-and-how-they-relate-non-disclosure-agreements-signed-epa-employees

You received this message because you an an employee of a US Government agency that conducts scientific research and your contact information is publicly available. If you would no longer like to receive emails from us, please click here to unsubscribe.

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Dina Diehm
Sent: Mon 11/13/2017 4:41:55 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

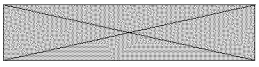
This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Dina Diehm
19 Summerfield Lane
New Castle, DE 19720

To: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Joseph Adamson[Adamson.Joseph@epamail.epa.gov]
From: Microsoft Outlook
Sent: Fri 11/3/2017 8:51:39 PM
Subject: Undeliverable: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6027.2 - NPRM / OMB Review / Review #1 / OW - 'Definition of "Waters of the United States" – Amendment of Effective Date of 2015 Clean Water Rule')
Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6027.2 - NPRM / OMB Review / Review #1 / OW - 'Definition of "Waters of the United States" – Amendment of Effective Date of 2015 Clean Water Rule')



Your message couldn't be delivered to multiple recipients.

The recipients weren't found at epamail.epa.gov.

dravis.samantha	**Office 365**	**Recipients**
Action Required	Recipients	

Unknown To address

Couldn't deliver to the following recipients:
Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov, Adamson.Joseph@epamail.epa.gov

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- **Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "To send this message again, click here." Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click Send.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: Fix email delivery issues for error code 5.1.10 in Office 365, and then send the message again. Retype the entire recipient address before selecting Send.

If the problem continues, forward this message to your email admin. If you're an email admin, refer to the More Info for Email Admins section below.

Was this helpful? *Send feedback to Microsoft.*

More Info for Email Admins

Status code: 550 5.1.10

This error occurs because the sender sent a message to an email address hosted by Office 365 but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Recipient has a valid license - Make sure the recipient has an Office 365 license assigned to them. The recipient's email admin can use the Office 365 admin center to assign a license (Users > Active Users > select the recipient > Assigned License > Edit).

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see Fix email delivery issues for error code 5.1.10 in Office 365.

Original Message Details

Created Date:	**11/3/2017 8:51:37 PM**
Sender Address:	**dravis.samantha@epa.gov**
Recipient Address:	**Dravis.Samantha@epamail.epa.gov, Bolen.Brittany@epamail.epa.gov, . . .**
Subject:	**Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6027.2 - NPRM / OMB Review / Review #1 / OW - 'Definition of "Waters of the United States" – Amendment of Effective Date of 2015 Clean Water Rule')**

Error Details

Reported error:	***550 5.1.10 RESOLVER.ADR.RecipientNotFound; Recipient Dravis.Samantha@epamail.epa.gov not found by SMTP address lookup***
DSN generated by:	**MWHPR09MB1485.namprd09.prod.outlook.com**

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELAY TIME
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2	11/3/2017 8:51:39 PM	MWHPR09MB1469.namprd09.prod.outlook.com	MWHPR09MB1485.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_25	1 sec

Original Message Headers

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From: "Dravis, Samantha" <dravis.samantha@epa.gov>
To: "Owens, Nicole" <Owens.Nicole@epa.gov>
CC: Samantha Dravis <Dravis.Samantha@epamail.epa.gov>, Brittany Bolen
          <Bolen.Brittany@epamail.epa.gov>, "Kenny, Shannon"
<Kenny.Shannon@epa.gov>,
          "Kime, Robin" <Kime.Robin@epa.gov>, "Pritchard, Eileen"
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<Adamson.Joseph@epamail.epa.gov>,
          "Nurse, Leanne" <Nurse.Leanne@epa.gov>
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Return-Path: dravis.samantha@epa.gov
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X-MS-Exchange-CrossTenant-OriginalArrivalTime: 03 Nov 2017 20:51:37.9737
 (UTC)
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08d522fcad7c
X-MS-Exchange-Transport-CrossTenantHeadersStamped: MWHPR09MB1485

To: Owens, Nicole[Owens.Nicole@epa.gov]
Cc: Samantha Dravis[Dravis.Samantha@epamail.epa.gov]; Brittany Bolen[Bolen.Brittany@epamail.epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]; Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Curry, Bridgid[Curry.Bridgid@epa.gov]; Joseph Adamson[Adamson.Joseph@epamail.epa.gov]; Nurse, Leanne[Nurse.Leanne@epa.gov]
From: Dravis, Samantha
Sent: Fri 11/3/2017 8:51:37 PM
Subject: Re: OP Policy Review - ORPM Office Director Approval Notification (SAN 6027.2 - NPRM / OMB Review / Review #1 / OW - 'Definition of "Waters of the United States" – Amendment of Effective Date of 2015 Clean Water Rule')

Approved for upload -thank you

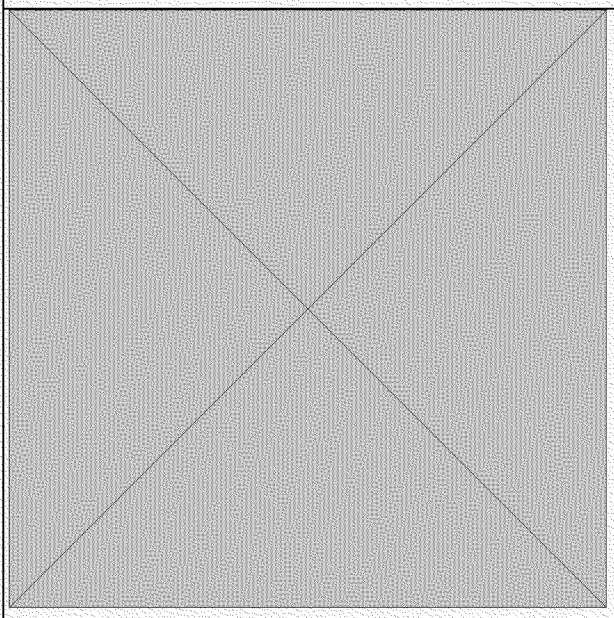
Sent from my iPad

On Nov 3, 2017, at 3:11 PM, Nicole Owens <Owens.Nicole@epamail.epa.gov> wrote:

> Approval for OMB Transmittal: NPRM - 'Definition of "Waters of the United States" – Amendment of Effective Date of 2015 Clean Water Rule'
>
> This Policy Review is ready for OP Associate Administrator Approval.
>
> Link to Policy Review Document-> <doclink.gif>

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: OpenTable
Sent: Thur 11/2/2017 3:18:45 AM
Subject: Samantha, your Insider is here!

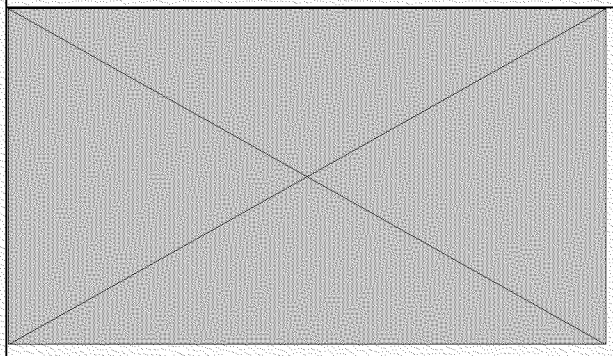
Washington, D.C. Area (Update)



Cast-Iron Cuisine

Chefs are turning to classic cast iron skillets as a way to present their fare with flair.

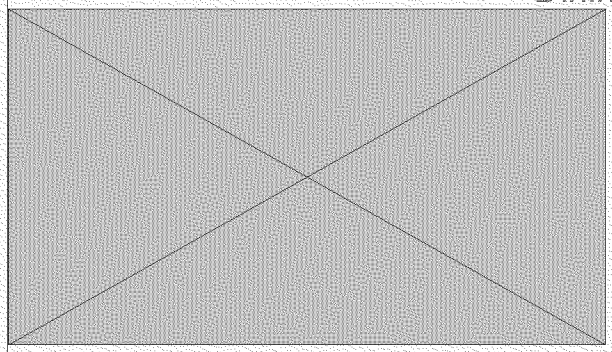
SEE THE DISHES



Thanksgiving, your way

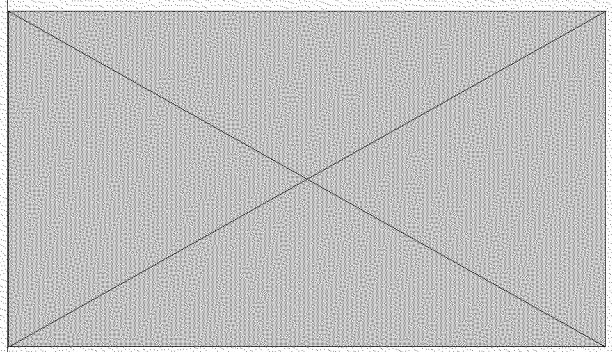
Let someone else plan the grand feast this year—and you choose where.
FIND YOUR TABLE

Dining Buzz



Talking Shop

Restaurant pros discussed the state of the industry at OpenTable's Innovation Summit.
READ NOW



Snap. Eat. Repeat.

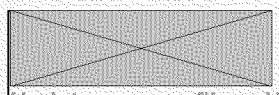
Swipe up on delicious Snaps that say "more" to book a restaurant reservation.
LEARN MORE

Did you know? Every 2,000 points = a $20 dining reward.
FIND YOUR TABLE about points

Earned
0 PTS

Next Reward
2,000 PTS

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Have questions? Visit community.opentable.com
Are you a restaurateur? See what OpenTable can do for you.
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.

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Morning Consult
Sent: Mon 11/13/2017 4:38:13 PM
Subject: Reminder: Earn a $25 Amazon Gift Card for Your Opinion!

Morning Consult is conducting a quick 10 minute survey, and we are interested in your opinion.

For your time, we are offering a $25 Amazon.com gift card, sent via email by Amazon.com, or the option to donate $25 to the American Red Cross, within 10 days of completing the survey, in compliance with Senate and House Rules on outside compensation.

Click here to start the survey.

The survey is available 24 hours a day for your convenience. This survey works on most desktops, laptops, tablets and mobile phones.

Thank you in advance, your input is important to us.

This email was sent by: %%Member_Busname%%

%%Member_Addr%% %%Member_City%%, %%Member_State%%, %%Member_PostalCode%%, %%Member_Country%%
Manage your email preferences

SUBSCRIBE

This email is intended for dravis.samantha@epa.gov.
Update your preferences or Unsubscribe

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Rickey Applegate
Sent: Fri 11/3/2017 7:26:17 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

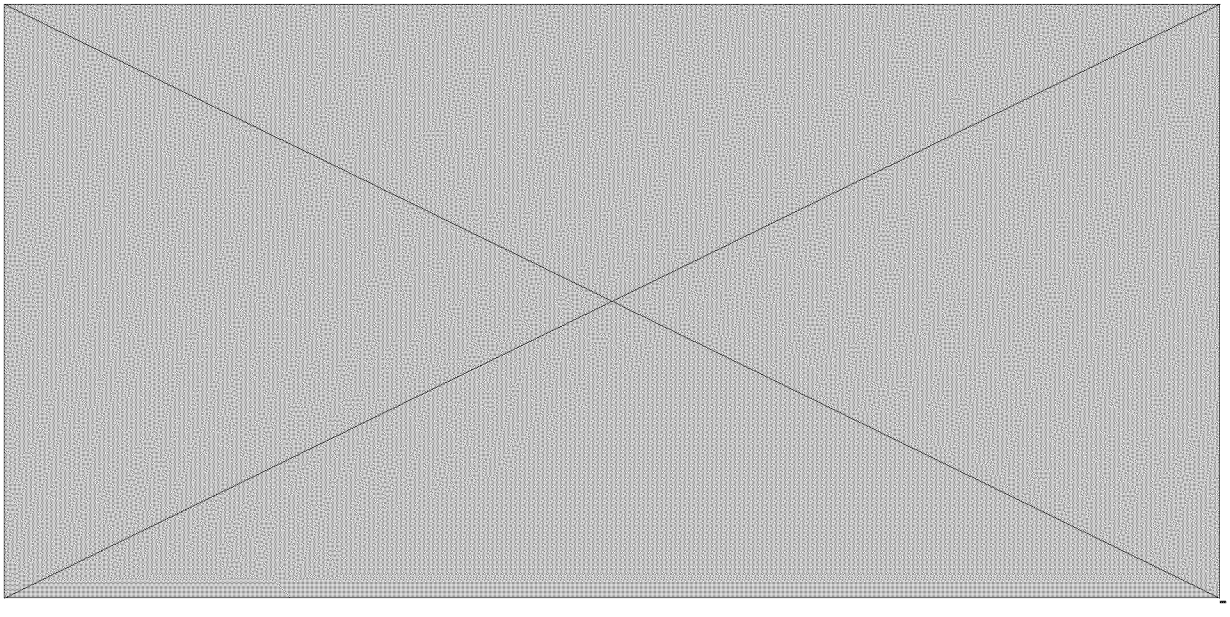
Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

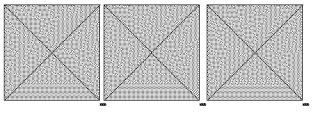
Thank you.

Rickey Applegate
941 Dalton Road
Cedar Vale, KS 67024

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Karen Harbert
Sent: Wed 11/1/2017 9:07:39 PM
Subject: Introducing...Energy Strong

Dear Samantha:
In the wake of recent natural disasters like Hurricanes Harvey and Irma, everyday Americans assumed the role of first responders as their family and friends faced sheets of rain, catastrophic flooding and destructive winds. The energy industry was at the forefront of this response.
Countless members of the energy industry worked alongside first responders and law enforcement officials to evacuate those in danger and begin the process of restoring critical energy sources.
The Global Energy Institute is proud to share their stories in a series of short videos titled "Energy Strong."
Each video brings us back to the critical hours during and immediately after these events, when the energy industry answered calls for assistance. We hope these stories will both educate and inspire.
First in the series is the story of how Shell's Tracy Neathery and his team assisted the city of Deer Park, Texas to prevent the city's ponds from flooding and damaging nearby homes and businesses.

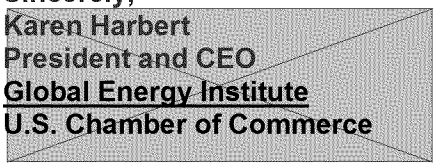




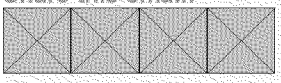
In the coming weeks, we will share more "Energy Strong" videos as we continue to highlight the

good works and community service of America's energy industry.

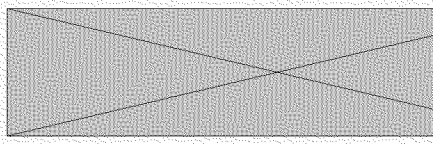
Sincerely,



Share this email:



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Got this as a forward? Sign up to receive our future emails.
View this email online.
1615 H Street, NW
Washington, DC | 20062 US
This email was sent to dravis.samantha@epa.gov.
To continue receiving our emails, add us to your address book.



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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Matthew Reinhart
Sent: Wed 11/1/2017 8:22:18 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Matthew Reinhart
6911 Gaston Ave
Dallas, TX 75214

From: Carter, Nancy
Location: 3500 WJCN
Importance: Normal
Subject: Accepted: Meeting with PotashCorp (PCS)
Start Date/Time: Tue 11/14/2017 7:00:00 PM
End Date/Time: Tue 11/14/2017 7:30:00 PM

;

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46 Offices in 20 Countries

This message is confidential and may be legally privileged or otherwise protected from disclosure. If you are not the intended recipient, please telephone or email the sender and delete this message and any attachment from your system; you must not copy or disclose the contents of this message or any attachment to any other person.

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#US

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Shawn Hancock
Sent: Wed 11/8/2017 7:36:39 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Shawn Hancock
1218 Road 136
Cheyenne, WY 82009

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Kyle Rogers
Sent: Wed 11/1/2017 6:24:35 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Kyle Rogers
211 Wellington Road
Irving, TX 75063

From: Jessica DeMonte
Location: 3500 WJCN
Importance: Normal
Subject: Accepted: [EXT SENDER] Meeting with PotashCorp (PCS)
Start Date/Time: Tue 11/14/2017 7:00:00 PM
End Date/Time: Tue 11/14/2017 7:30:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Jake Wyzard
Sent: Fri 11/3/2017 5:12:24 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Jake Wyzard
1700 South Union Ave
Tulsa, OK 74107

To: Rafferty, Andrew (NBCUniversal)[Andrew.Rafferty@nbcuni.com]; Dravis, Samantha[dravis.samantha@epa.gov]; Inge, Carolyn[Inge.Carolyn@epa.gov]; Kime, Robin[Kime.Robin@epa.gov]
From: Wilcox, Jahan
Sent: Wed 11/8/2017 5:54:23 PM
Subject: RE: Coffee with Andrew Rafferty

Tuesday afternoon works or the week after Thanksgiving.

From: Rafferty, Andrew (NBCUniversal) [mailto:Andrew.Rafferty@nbcuni.com]
Sent: Wednesday, November 8, 2017 12:51 PM
To: Dravis, Samantha <dravis.samantha@epa.gov>; Inge, Carolyn <Inge.Carolyn@epa.gov>; Wilcox, Jahan <wilcox.jahan@epa.gov>
Subject: RE: Coffee with Andrew Rafferty

Sorry guys I'll be in North Carolina wed/thurs next week!

Mon or Tues next week is open or 11/20 and 11/21. Otherwise we can set something up for after thanksgiving

-----Original Appointment-----
From: Kime.Robin@epa.gov [mailto:Kime.Robin@epa.gov] **On Behalf Of** Dravis, Samantha
Sent: Wednesday, November 08, 2017 12:42 PM
To: Rafferty, Andrew (NBCUniversal); Inge, Carolyn; Wilcox, Jahan
Subject: [EXTERNAL] Coffee with Andrew Rafferty
When: Wednesday, November 15, 2017 3:00 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Lobby of Trump Hotel

Please contact kime.robin@epa.gov with any changes to this appointment. Thank you.

From: Rafferty, Andrew (NBCUniversal)
Location: Lobby of Trump Hotel
Importance: Normal
Subject: Declined: [EXTERNAL] Coffee with Andrew Rafferty
Start Date/Time: Wed 11/15/2017 8:00:00 PM
End Date/Time: Wed 11/15/2017 8:30:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]; Inge, Carolyn[Inge.Carolyn@epa.gov]; Wilcox, Jahan[wilcox.jahan@epa.gov]
From: Rafferty, Andrew (NBCUniversal)
Sent: Wed 11/8/2017 5:50:44 PM
Subject: RE: Coffee with Andrew Rafferty

Sorry guys I'll be in North Carolina wed/thurs next week!
Mon or Tues next week is open or 11/20 and 11/21. Otherwise we can set something up for after thanksgiving

-----Original Appointment-----
From: Kime.Robin@epa.gov [mailto:Kime.Robin@epa.gov] **On Behalf Of** Dravis, Samantha
Sent: Wednesday, November 08, 2017 12:42 PM
To: Rafferty, Andrew (NBCUniversal); Inge, Carolyn; Wilcox, Jahan
Subject: [EXTERNAL] Coffee with Andrew Rafferty
When: Wednesday, November 15, 2017 3:00 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Lobby of Trump Hotel

Please contact kime.robin@epa.gov with any changes to this appointment. Thank you.

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Chance Collins
Sent: Fri 11/3/2017 4:32:25 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Chance Collins
15437 Lake Road
Skiatook, OK 74070

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Terry Gary
Sent: Fri 11/3/2017 4:25:54 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Terry Gary
1933 west 65th street
Tulsa, OK 74132

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Tony Conetta
Sent: Fri 11/3/2017 1:43:51 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Tony Conetta
4815 E 112th Pl
Tulsa, OK 74137

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Wed 11/8/2017 12:23:25 PM
Subject: Get It Done: Practical Time Management for Lawyers

If you are having trouble reading this email, read the online version.

Get Organized and Get Things Done: Practical Time Management for Lawyers

Wednesday, November 29, 2017
1:00 - 2:00 p.m. Eastern
Telephone Seminar | Audio Webcast

Too much to do and not enough time to do it? You're in good company! But by instituting practical time management practices, you can easily increase your productivity and achieve your goals on a daily basis.

Taught by a former practicing attorney and national productivity consultant to lawyers, this 60-minute webcast, will help you:

- Determine how to plan, prioritize, and schedule your work (and stay focused on those priorities!)
- Break down project tasks and use your calendar effectively
- Overcome tendencies to procrastinate
- Develop an action plan to improve your time management and productivity skills

Register todayfor this essential seminar. Register two or more from your organization and **save**.

Faculty

Irwin Karp, Productive Time

Group Rate

Significant discounts are available when two or more registrants in the same physical location view or listen to an ALI CLE webcast or telephone seminar using one computer connection or telephone. **Save up to 50%**!

Questions?

Please don't hesitate to email us any questions you may have at **custserv@ali-cle.org**

American Law Institute Continuing Legal Education
1-800-CLE-NEWS | 4025 Chestnut Street, Philadelphia, PA 19104-3099

This email was sent to dravis.samantha@epa.gov by American Law Institute Continuing Legal Education.

To ensure delivery to your inbox, please add ALICLE@learn.ali-cle.org to your address book and safe-sender list.

Unsubscribe or Update Your Email Preferences

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Charles Lane
Sent: Mon 11/13/2017 2:02:55 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Charles Lane
909 Sugar Pine Dr.
Bear, DE 19701

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Mon 11/13/2017 12:04:35 PM
Subject: How to Ethically "Break Up" with Your Client

If you are having trouble reading this email, read the online version.

Breaking Up Is Hard to Do: Ethically Terminating the Attorney-Client Relationship

Provides 1 hour of ethics instruction

Thursday, November 16, 2017 | 12:00 – 1:00 p.m. Eastern

Telephone Seminar | Audio Webcast

When the attorney-client relationship isn't working out, it is important that lawyers know when and how to properly end it. Attend this 60-minute audio webcast for the necessary guidance to ensure that your withdrawal from representation is permissible and ethical.

Topics include:

- the steps to client termination, closing your file, and crafting the end-of-engagement letter
- unique issues raised by active litigation, such as obtaining the court's permission
- attorney and possessory liens

Register today for this practical seminar. Register two or more from your organization and **save**.

Faculty

Mark J. Fucile, Fucile and Reising LLP, Portland, Oregon
Peter R. Jarvis, Holland & Knight LLP, Portland, Oregon - *ALI Member*

Group Rate

Significant discounts are available when two or more registrants in the same physical location view or listen to an ALI CLE webcast or telephone seminar using one computer connection or telephone. **Save up to 50%**!

Questions?

Please don't hesitate to email us any questions you may have at **custserv@ali-cle.org**

American Law Institute Continuing Legal Education
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From: Susan Flanagan
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Accepted: Meeting with the Agricultural Retailers Association: General Duty Clause [CAA Section 112(r)(1)]
Start Date/Time: Thur 11/9/2017 6:30:00 PM
End Date/Time: Thur 11/9/2017 7:00:00 PM

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Mon 11/13/2017 12:22:41 AM
Subject: Upcoming Webcasts from ALI CLE | November 15 - December 6

If you are having trouble reading this email, read the online version.

UPCOMING WEBCASTS

Take a look at ALI CLE's upcoming audio and video webcasts. From latest developments to ethics to skills courses, we have a variety of programs to choose from. Find the one that best fits your needs!

Charitable Planning with Closely-Held Business Interests Cosponsored by The American College of Trust and Estate Counsel (ACTEC)	November 15
Breaking Up Is Hard to Do: Ethically Terminating the Attorney-Client Relationship	November 16
Contract Drafting Traps for the Unwary: Limitation of Liability Provisions	November 21
Don't Hit Delete: Electronic Record Retention in the Workplace	November 21
Estate Planning in Depth: Special Needs Planning - Securing the Future of Persons Challenged by Disabilities	November 28
Get Organized and Get Things Done: Practical Time Management for Lawyers	November 29
Rules of Engagement: Ethical Considerations for Engagement Agreements	November 30
Clean Water Act: Law and Regulation	December 4 - 5
Legal Opinions in Real Estate Transactions: What You Need To Know	December 5
Planning for Incapacity: Financial Powers of Attorney, Health Care Directives, and Ethical Challenges	December 6

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To: Dravis, Samantha[dravis.samantha@epa.gov]; Tejada, Matthew[Tejada.Matthew@epa.gov]; jacinorris_eja@hotmail.com[jacinorris_EJA@hotmail.com]
From: Jacqueline V. Norris
Sent: Wed 11/1/2017 4:34:06 PM
Subject: Re: Reorganization OEJ/OECA in EPA Office of Policy

Hello Everyone,

I had some time to review and reflect on historical notes (2006 to Present) emergence of OEJ under the office of OECA. It appears OECA created "Environmental Justice Strategic Enforcement Screening Tool (EJSEAT) to serve as "a consistent methodology that would enable to OECA to identify communities or areas experiencing disproportionate environmental and public health burdens for the purposes of enhancing focusing OECA's enforcement and compliance activities in those areas."

For example, things have emerged and the offices OEJ/OECA are now separate under Policy. Will it still be the intent of both offices to improve consistency in EPA EPA's environmental stewardship (justice) programs that are moving towards having States initiate environmental stewardship (justice) regulations by partnering with EPA/EJIWG, and Environmental Council of States, which is a 501c(4).

These are just some questions as it relates to the role out the two sections, OEJ/OECA, which is now within the Office Policy, which seems more to design policy and regulatory initiatives with states nationally.

These are just my thoughts as you move out to meet with environmental communities before the end of the year.

Rev. Jacqueline V. Norris [Jaci]
Social Engineer Consultant
KeAnJa Prince George's Environmental Social Justice Marginalized Community Collaborative/Graduate EPA's Environmental Justice Academy/Certified EJ Academy Train-the-Trainer/Region IV Office EJ & Sustainability in partnership/Atlanta Metropolitan State College & Underserved Partnership Program
(240) 351.0983 (Cell)

On Wed, Oct 11, 2017 at 2:39 PM, Jacqueline V. Norris <keanjagreen@gmail.com> wrote:

Good Afternoon,

You had mentioned Office of Environmental Justice has now moved within the Office of Policy. As a faith-based ordained leader, I would like to discuss with other faith-based leaders, such as headquarters, regional offices, private entities, NEJAC/or the Federal Inter-Agency Environmental Justice Work Group has worked collaboratively on the below initiatives from September 2016 to present. This includes giving a brief outline how EPA and Inter-Agency Work Group will collaborate in the future from a "rule of law" or policy perspective being implemented/or modified?

Please provide case studies already funded/or ended in the last year.

Civil rights and environmental justice compliance plan

Applies to recipients of federal funding, public and private

1. Describe what do you plan to do

2. Analyze benefits and burdens on all people

Statistical and anecdotal evidence

GIS mapping and demographics

Define standards to measure progress and hold officials accountable

3. Analyze alternatives

4. Include people of color and low-income people

5. Implement a plan to distribute benefits and burdens fairly and avoid discrimination: both intentional discrimination, and unjustified discriminatory impacts.

Cordially,

Rev. Jacqueline V. Norris [Jaci]
Management Consultant
KeAnJa Prince George's Environmental Social Justice
Marginalized Community Collaborative/Graduate EPA's

Environmental Justice Academy/Certified Environmental Justice Academy Train-the-Trainer/EPA's Office of Environmental Justice & Sustainability partnership with Atlanta Metropolitan State College & Underserved Partnership Program
(240) 351.0983 (Cell)

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Leslie Phipps
Sent: Wed 11/1/2017 4:01:38 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Leslie Phipps
829 West 1935 South
Woods Cross, UT 84087

To: Diamant, Adam[ADiamant@epri.com]
From: Diamant, Adam
Sent: Mon 11/13/2017 8:45:08 PM
Subject: Presentations from EPRI Fuels and Planning Seminar (Nov 8-9, 2017) (Part 1 of 2)
S1_Diamant_Intro_2017 EPRI Seminar_110817.pdf
S2_Petak_ICF_NatGas Future_2017 EPRI Seminar_110817.pdf
S3_Hsieh_DOE_NatGas Evolving Role_2017_EPRI_Seminar_110817.pdf
S4_Peress_EDF_Gas-Electric_2017 EPRI Seminar_110817.pdf
S5_Diamant_Wilson_IEN-P_2017 EPRI Seminar_Final_110817.pdf
S6_Jenkins MIT_Integrated Planning_2017 EPRI Seminar_110817.pdf
EPRI_2017 Agenda_Participants_Final_110917.pdf

Dear EPRI Seminar Speakers and Participants,

Thank you all for joining us last week for the **36th Annual EPRI Seminar on Fuels, Power Markets and Resource Planning**. We hope you enjoyed the seminar and found the presentations and discussion to be interesting and provocative.

Attached you'll find PDF copies of the speaker presentations. Because of the size of these presentations and the limitations on some of your email systems, I'm sending this out in two separate emails with half the presentations attached to each email.

If you have any questions or feedback about this year's seminar, please contact me.
Best regards,
Adam

Adam Diamant
Technical Executive
Electric Power Research Institute (EPRI)
Manager, Market Analysis and Integrated Portfolio Planning (P178b)
510-260-9105
adiamant@epri.com

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EPRI | ELECTRIC POWER RESEARCH INSTITUTE

AGENDA

36TH ANNUAL SEMINAR ON FUELS, POWER MARKETS, AND RESOURCE PLANNING

November 8-9, 2017 • EPRI Office, Washington, DC

WEDNESDAY, NOVEMBER 8		
TIME	**TOPIC**	**PRESENTER**
8:30 a.m.	Registration and Continental Breakfast	
9:00 a.m.	Welcome and Introduction	***Adam Diamant,*** *Electric Power Research Institute (EPRI)*
Session 1	***Future Natural Gas Supply, Demand, and Prices***	
9:15 a.m.	Future Natural Gas Supplies, Demand and Pricing in North America	***Kevin Petak,*** *ICF*
10:00 a.m.	When the Disrupter Becomes Disrupted: The Evolving Role of Natural Gas in Electricity	***Eric Hsieh,*** *U.S. Department of Energy*
10:45 a.m.	Morning Break	
11:00 a.m.	Vertical Market Power in Interconnected Natural Gas and Electricity Markets	***N. Jonathan Peress,*** *Environmental Defense Fund*
11:45 a.m.	Lunch	
12:15 a.m.	**Luncheon Address** – EPA's Regulatory Agenda	***Drew Feely,*** *Policy Counsel, U.S. Environmental Protection Agency*
Session 2	***Evolution of Electric Sector Resource Planning***	
1:00 p.m.	EPRI's Integrated Energy Network Planning (IEN-P) Initiative and Related Research	• ***Adam Diamant,*** *EPRI* • ***Tom Wilson,*** *EPRI*
1:45 p.m.	Integrated Generation, Transmission and Distribution Planning & MIT Utility of the Future	***Jesse Jenkins,*** *MIT Energy Initiative Electric Power Systems Center*
2:30 p.m.	Afternoon Break	
2:45 p.m.	The Value of Operational Flexibility for Fossil-fired Generation Units	***John Bistline****, EPRI*
3:30 p.m.	EPRI Member Perspectives on Addressing the IEN Resource Planning Challenges	▪ ***Robert McMurry,*** *Duke Energy* ▪ ***Jenifer Hedrick,*** *Southern CA Edison* ▪ ***Charles Rossmann,*** *Southern Company*
4:45 p.m.	Adjourn Day 1	
6:30 p.m.	**EPRI PS-178(B) Member Dinner**	***Georgia Brown's*** *(950 15th Street NW, Washington DC)*

Together . . . Shaping the Future of Electricity

THURSDAY, NOVEMBER 9		
TIME	**TOPIC**	**PRESENTER**
8:30 a.m.	Continental Breakfast	
Session 3	***Wholesale Electricity Markets and Grid Reliability and Resiliency***	
9:00 a.m.	**Morning Keynote** – DOE Grid Resiliency Pricing NOPR and Report on Electricity Markets and Reliability	***Catherine Jereza,*** *Deputy Assistant Secretary, U.S. DOE*
9:45 a.m.	The Role of Wholesale Electricity Markets in Improving Electric Sector Reliability and Resiliency	***Honorable Philip D. Moeller,*** *Edison Electric Institute*
10:30 a.m.	Morning Break	
10:45 a.m.	PJM's Evolving Resource Mix and System Reliability	***M. Gary Helm,*** *PJM Interconnection*
11:30 a.m.	Incentivizing System Reliability and Resiliency in the Wholesale Power Market	***Derek Bandera,*** *Midcontinent Independent System Operator*
12:15 a.m.	Wrap Up & Closing Remarks	***Charles Rossmann,*** *Southern Company*
12:20	Light Lunch and Roundtable Discussion	*All Participants*
1:00 p.m.	**Adjourn**	

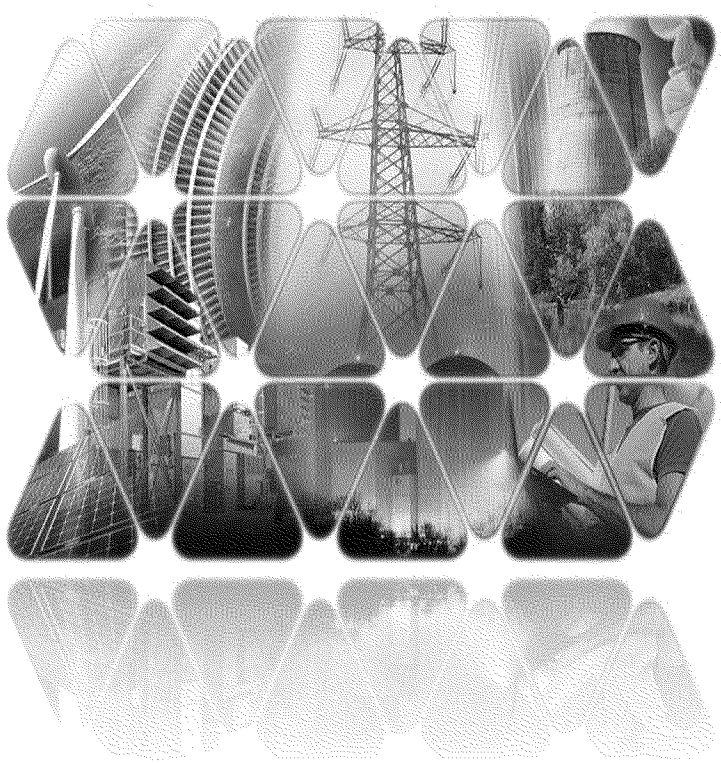
PARTICIPANTS

NAME	TITLE	COMPANY
Misha Adamantiades	Senior Analyst	U.S. Environmental Protection Agency
Derek Bandera	Executive Director, Federal Regulatory Affairs	Midcontinent Independent System Operator, Inc.
John Bistline	Senior Technical Leader	Electric Power Research Institute
Stephen Capana	Director, Strategic Analysis, EERE	U.S. Department of Energy
Mike Cashin	Environmental Policy Advisor	Minnesota Power
Kevin Chreston	Manager	DTE Energy
Beth Conlin	Environmental Protection Specialist	U.S. Environmental Protection Agency
Deana Dennis	Senior External and Government Relations	Electric Power Research Institute
Adam Diamant	Technical Executive	Electric Power Research Institute
Delavane Diaz	Senior Technical Leader	Electric Power Research Institute
Nathan Domyahn	Director, Generation Engineering	Great River Energy
Samantha Dravis	Senior Counsel and Associated Administrator	U.S. Environmental Protection Agency
David Evans	Economist	U.S. Environmental Protection Agency
William Gould	Director, Research and Development	Electric Power Research Institute
Dale Harris	Senior Program Manager, Enterprise Planning	Tennessee Valley Authority
Jenifer Hedrick	Project Manager	Southern California Edison Co.
M. Gary Helm	Lead Market Strategist	PJM Interconnection
Eric Hsieh	Director, Office of Energy Finance and Incentives Analysis	U.S. Department of Energy
David Hunter	Senior Government Representative	Electric Power Research Institute
Jesse Jenkins	Researcher	Massachusetts Institute of Technology
Catherine Jereza	Deputy Assistant Secretary	U.S. Department of Energy
Robert McMurry	Director of Carolinas IRP	Duke Energy Corp.
Natalie Mills	Environmental Engineer	Southern Company
Philip Moeller	Executive Vice President, Business Operations Group and Regulatory Affairs	Edison Electric Institute
N. Jonathan Peress	Senior Director, Energy Market Policy	Environmental Defense Fund
Kevin Petak	Managing Director, Natural Gas and Liquid Markets	ICF

PARTICIPANTS		
NAME	**TITLE**	**COMPANY**
James Read	Principal	Brattle Group, Inc.
Laureen Ross-McCalib	Manager, Resource Planning	Great River Energy
Charles Rossmann	Forecasting & Model Development Man	Southern Company
Ira Shavel	Principal	Brattle Group, Inc.
Hunaid Sulemanji	Lead Analyst II	New York Power Authority
Natalie Tacka	Engineer	PJM Interconnection
Joel Theis	Economist	DOE National Energy Technology Laboratory
Barbara Tyran	Executive Director, Government and External Relations	Electric Power Research Institute
Thomas Wilson	Principal Technical Executive	Electric Power Research Institute
David Young	Principal Technical Leader	Electric Power Research Institute

EPRI ELECTRIC POWER RESEARCH INSTITUTE

36th EPRI Seminar on Fuels, Power Markets and Resource Planning



Electric Power Research Institute

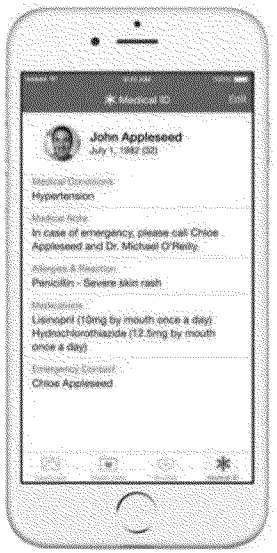
Washington, DC
November 8-9, 2016

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Safety Message – Emergency Contact Information

- 2015 EPRI member emergency incident
- It is important for emergency responders to have access to your emergency contact information
- Add emergency info into your iPhone health app
  - Emergency **contact information**
  - **Medication** and other pertinent personal information
  - 1st responders can locate this info without a password
- Get CPR certified and encourage your colleagues
- Fill in “emergency contact” information when registering online for all EPRI events





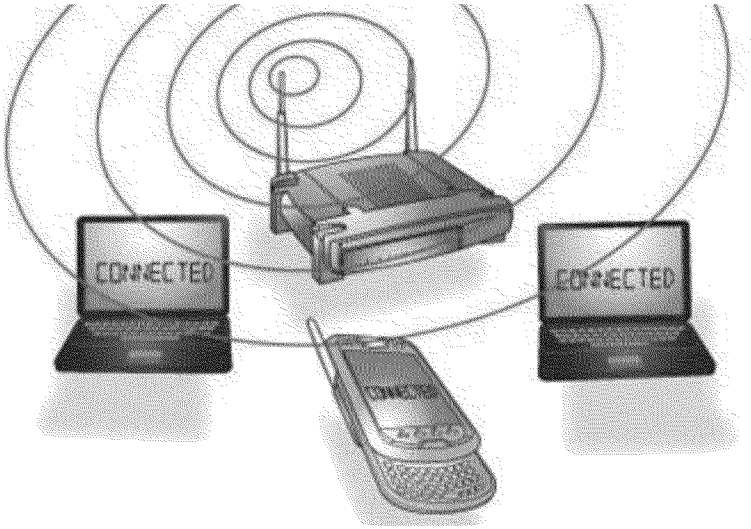


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EPRI DC Office WiFi Access

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Welcome & Introductions



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17cv01906 Sierra Club v. EPA ED_001523_00006094-00004

This Seminar Is Hosted by EPRI's Research Program on *Integrated Portfolio Planning & Market Analysis (PS-178B)*

Project Set 178B is focused on:

- Integrated Generation, Transmission & Distribution Planning
  - Focus on new developments in resource planning
  - Explore and develop new analysis tools and methods to address current and future resource planning issues.
- Fuels and Power Market Analysis
  - Dynamics of the natural gas markets and prices, and interactions between fuels and power markets
  - Potential impact of large-scale deployment of utility-scale, variable renewables on wholesale power markets, dispatch, and economic value of renewable and fossil-fired generation resources.
  - Evolution of wholesale power markets

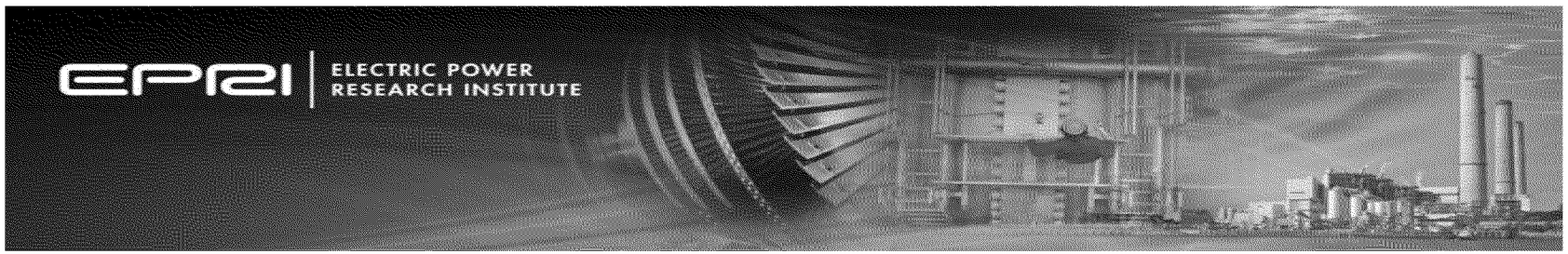
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2017 Seminar Topics

- Natural Gas Supply, Demand and Pricing
- Evolution of Electric Sector Resource Planning
- Wholesale Power Markets, Grid Reliability and Resiliency

Information Packets

- Agenda, participant list and speaker bios
- Name tag & table card



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Agenda — Day 1 (Wed. Nov 8th)

TIME	TOPIC
8:30 a.m.	*Registration and Continental Breakfast*
9:00 a.m.	Welcome, Introductions & Meeting Goals
9:15 – 11:45 a.m.	**Session 1 — Natural Gas Supply, Demand, and Pricing**
10:45 – 11:00 a.m.	*Morning Break (15 min)*
11:45 – 1:00 p.m.	*Lunch*
12:15 – 12:45 p.m.	**Luncheon Address —** Sarah Dravis, Senior Counsel and Associate Administrator, US EPA
1:00 – 4:45 p.m.	**Session 2 — Evolution of Electric System Resource Planning**
2:30 – 2:45 p.m.	*Afternoon Break (15 min)*
6:30 – 8:30 p.m.	*EPRI PS-178(b) Member Dinner*

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Agenda — Day 2 (Thurs. Nov 9th)

TIME	TOPIC
8:30 a.m.	*Continental Breakfast*
9:00 a.m.	**Morning Keynote —** *Catherine Jereza, Deputy Assistant Secretary, U.S. DOE*
9:00 –12:15 p.m.	**Session 3 — Wholesale Electricity Markets and Grid Reliability and Resiliency**
10:30 –10:00 a.m.	*Morning Break (15 min)*
12:15 –1:00 p.m.	*Lunch and Roundtable Discussion*

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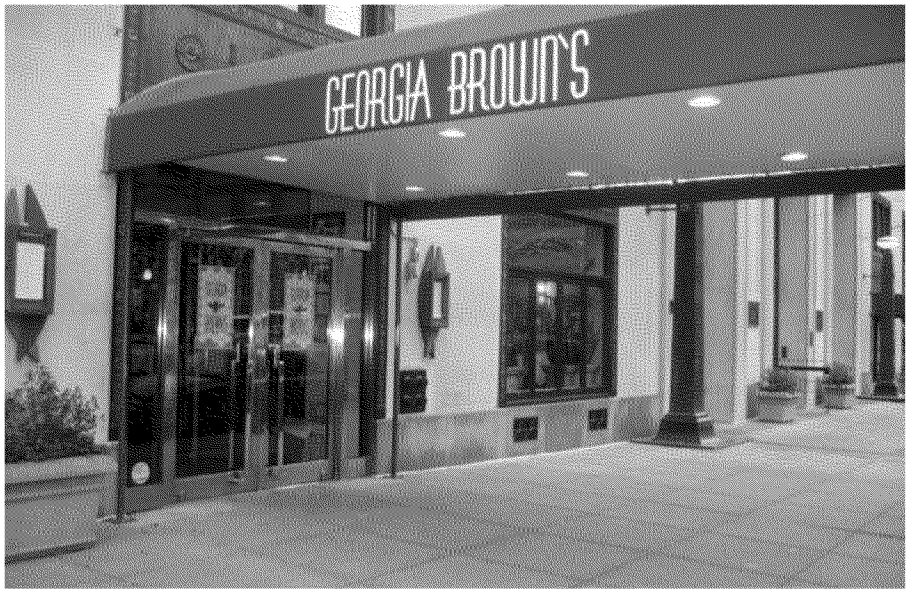
- Today's seminar is designed to facilitate highly interactive discussion. Please speak up and ask questions!!
- **"Chatham House" rules:**

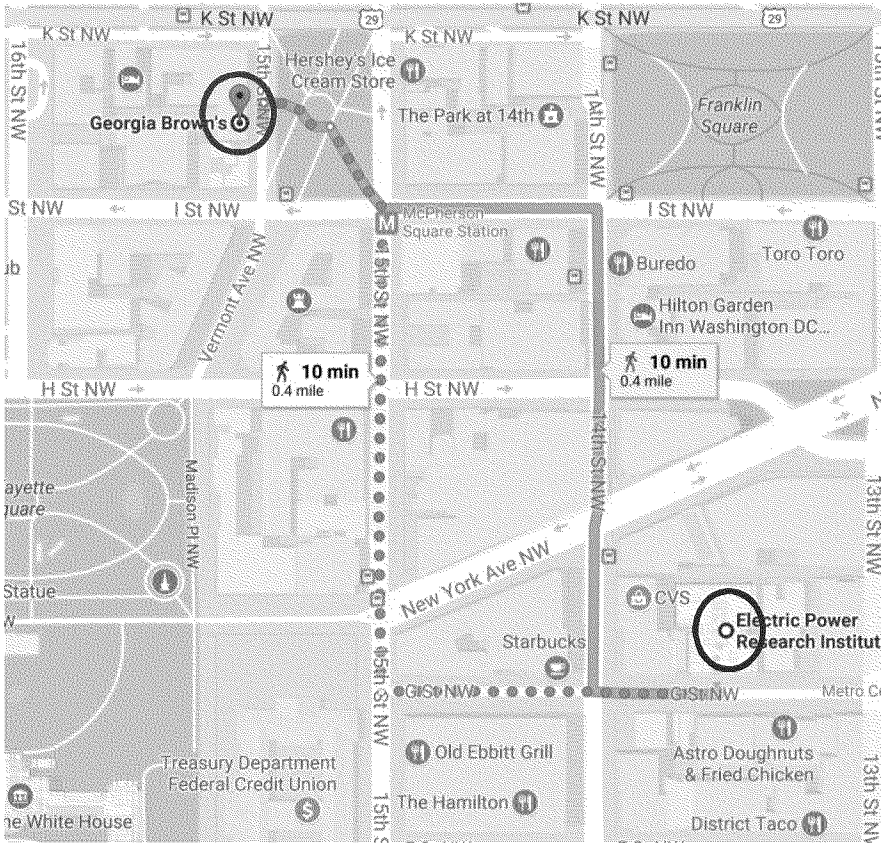
  *Participants are free to use the information received, but neither the **identity** nor the **affiliation** of the speaker(s), nor that of **any other participant**, may be revealed.*

- No press is attending the seminar.
- The seminar is not being recorded, and no formal meeting minutes will be produced or published.

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EPRI Member Dinner Tonight @ Georgia Brown's



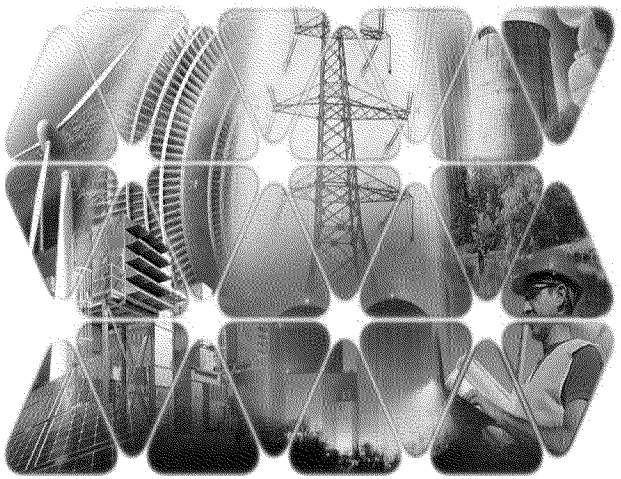


- **Time**: **6:30 p.m.**

- **Place**: **Georgia Brown's**
  950 15th St NW,
  Washington, DC 20005
  Phone: (202) 393-4499

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Thank You



Together…Shaping the Future of Electricity

Adam Diamant
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PS-178B Program Manager
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Future Natural Gas Supplies, Demand and Pricing for the United States, Mexico, and Canada

EPRI's 36th Annual Seminar on Fuels, Power Markets, and Resource Planning

EPRI Office, Washington, DC

November 8, 2017

Kevin Petak
Managing Director, Natural Gas and Liquids Markets

703-218-2753
kevin.petak@icf.com

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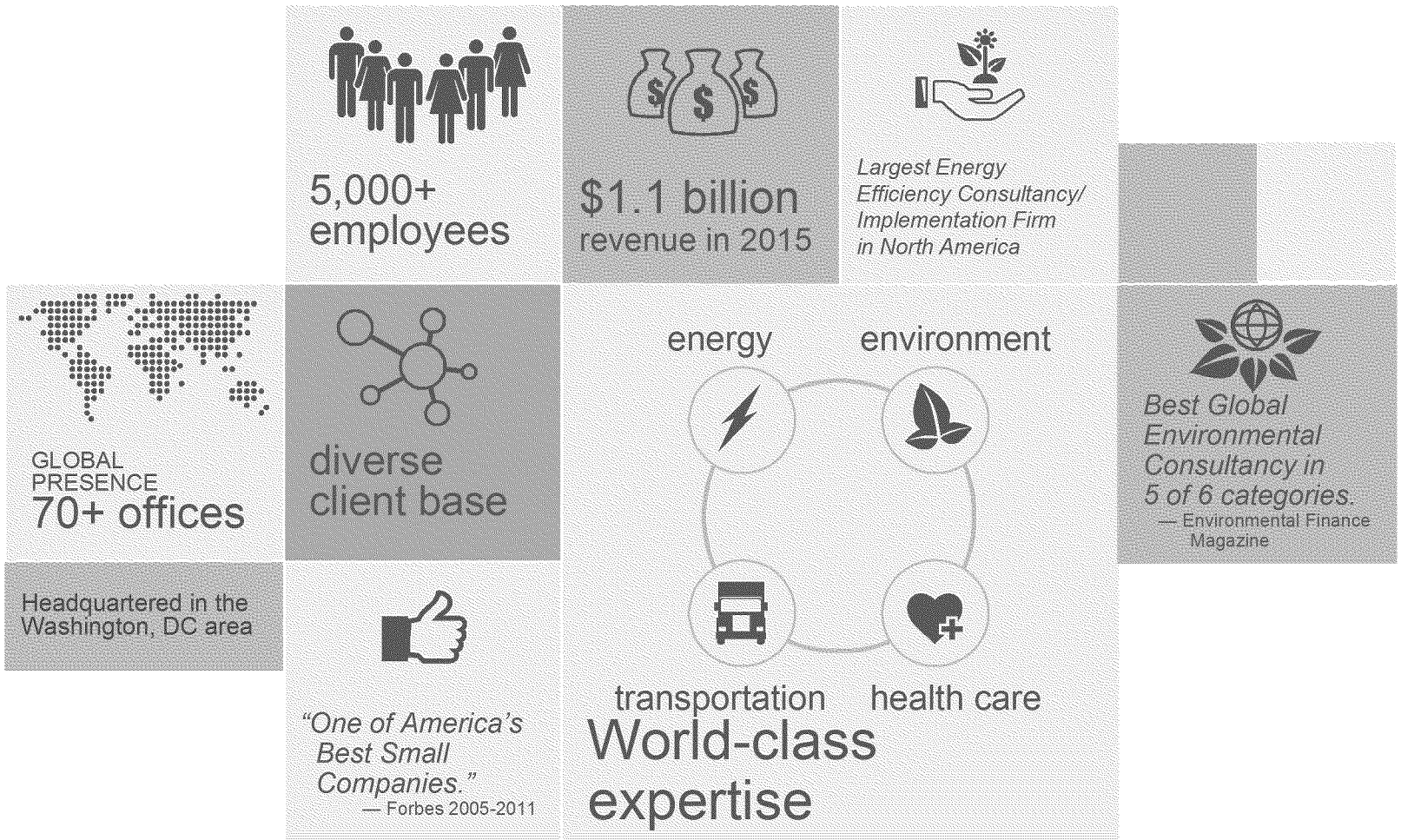
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ICF

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Outlook for North American Markets

- **Market Overview, Highlighting Key Factors Driving Natural Gas Supply, Demand, and Pricing**
- **Uncertainties for Market Development**
- **Implications and Conclusions**

Setting the Stage with Key Observations about Recent Market Trends

- North American natural gas has generally been in a "supply push" and not a "demand pull" environment during the past five years.
- Gas supply has been growing robustly as productivity continues to rise, despite lower drilling levels over the past 24 months.
- Warmer-than normal winters have also influenced (reduced) gas prices.
- Drivers are in place to shift the gas market into a "demand pull" environment. Future gas prices will be determined by the "tug of war" between demand growth and technology evolution for gas supply.

Key Trends Projected in ICF's Base Case

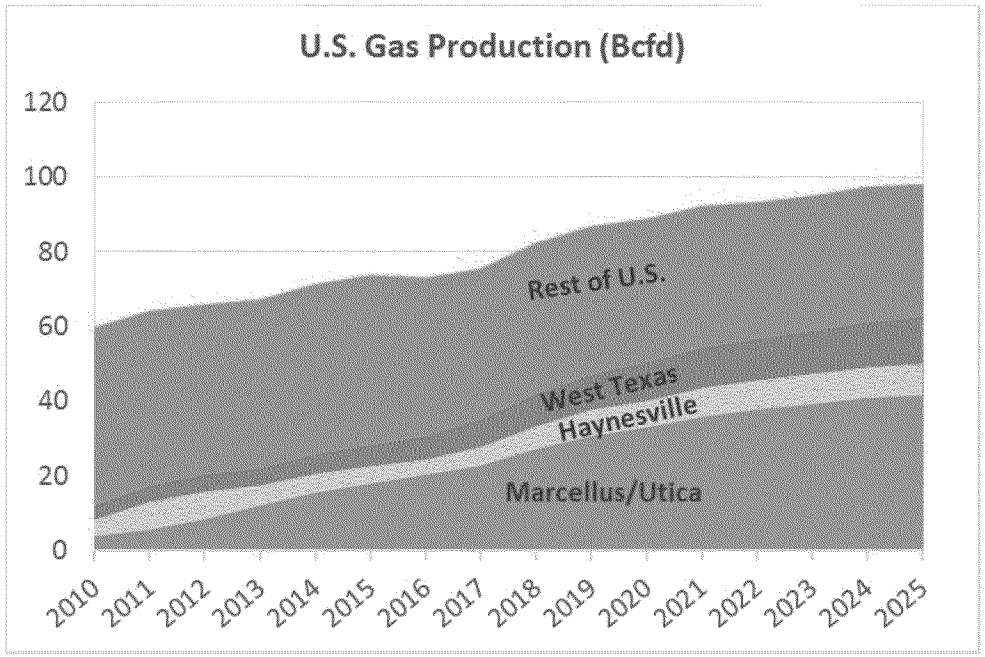
- Natural gas prices will be modestly higher during the next decade, approaching $4 per MMBtu at Henry Hub by 2025.
- But, gas price increases will be limited by relatively high price elasticity of U.S. supplies – Marcellus/Utica, Haynesville, and West Texas supplies are abundant.
- Even though prices will be up, gas will remain attractively priced for many consumers.
- LNG and Mexico exports are likely to rise significantly – LNG exports approach 10 Bcfd and Mexico exports rise to 6 Billion cubic feet per day (Bcfd) by 2025.
- U.S. and Canada's gas use for power is also up significantly; +9 Bcfd (35%) by 2025.
- Significant upside for gas exports if gas-fired power generation doesn't grow by as much as projected.

17cv01906 Sierra Club v. EPA ED_001523_00006095-00006

Important Assumptions in ICF's Base Case

- Economic activity remains strong with 2.1 % growth in GDP annually.
- Oil prices rise, reaching $75 per barrel by 2025.
- Global gas trade rebounds with healthy economic activity.
- Mexico's gas use rises as older oil-fired power plants are replaced by newer gas units.
- Technological improvements continue for gas supply development, increasing recovery factors.
- Electric load growth averages roughly 0.7% per year across the U.S. and Canada, consistent with recent ISO projections.
- National carbon reduction programs are implemented, with some states adopting more aggressive measures.
- Renewables growth occurs, meeting state standards.

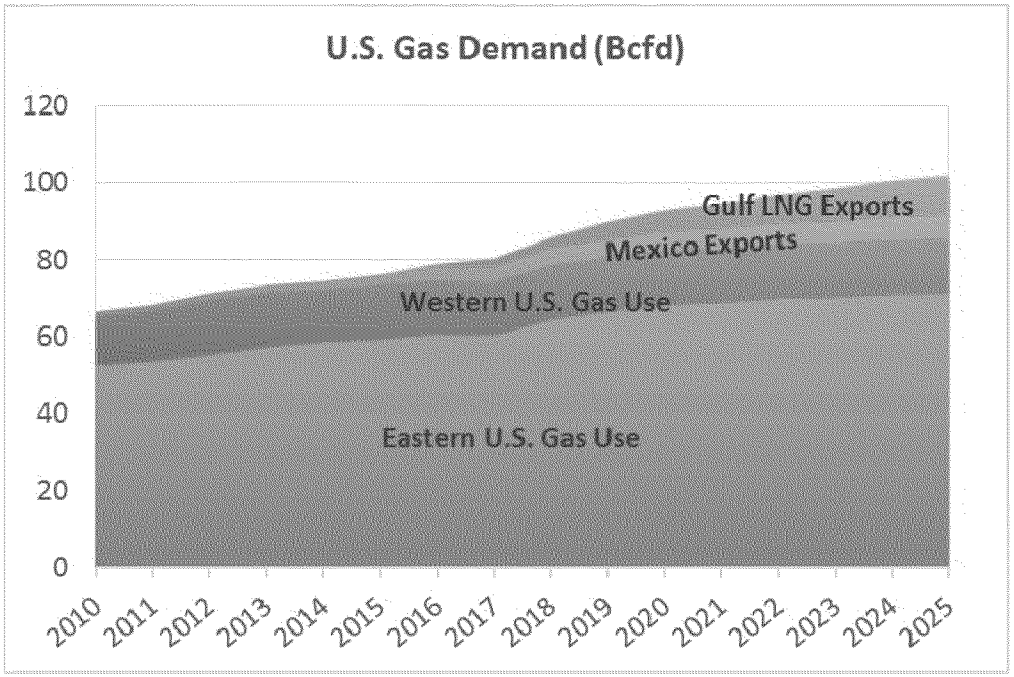
ICF's Projection for U.S. Gas Supply – Robust Growth Likely to Continue but Concentrated in a Few Areas



- Total gas production approaches 98 Bcfd by 2025.
- Marcellus/Utica's production up to 42 Bcfd – continuing to be the largest gas play in North America.
- West Texas approaches 13 Bcfd – diverse production area with upside potential.
- A resurging Haynesville rises to over 8 Bcfd.
- Rest of U.S. down by 3 Bcfd.

ICF

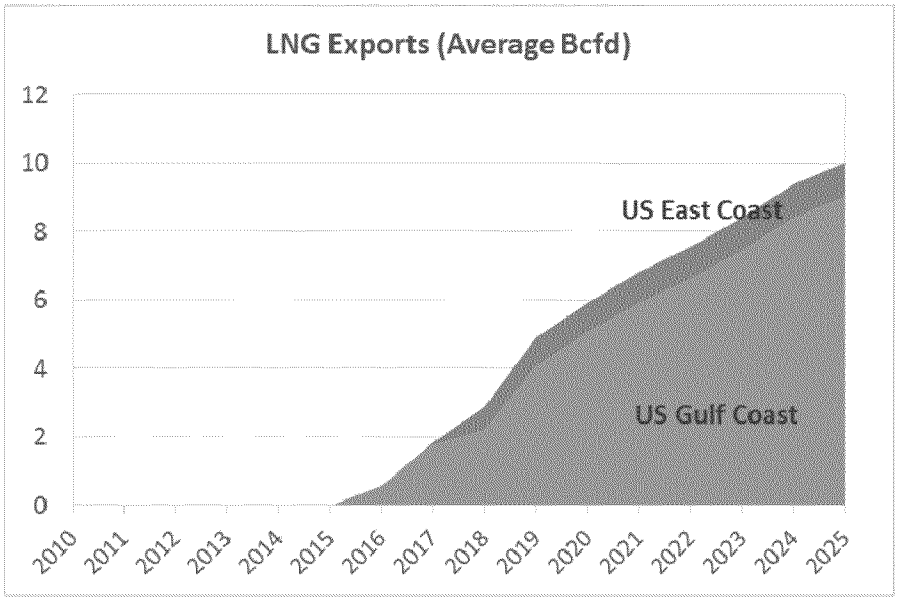
ICF's Projection for U.S. Gas Use – Growth Will Come from "New Markets"

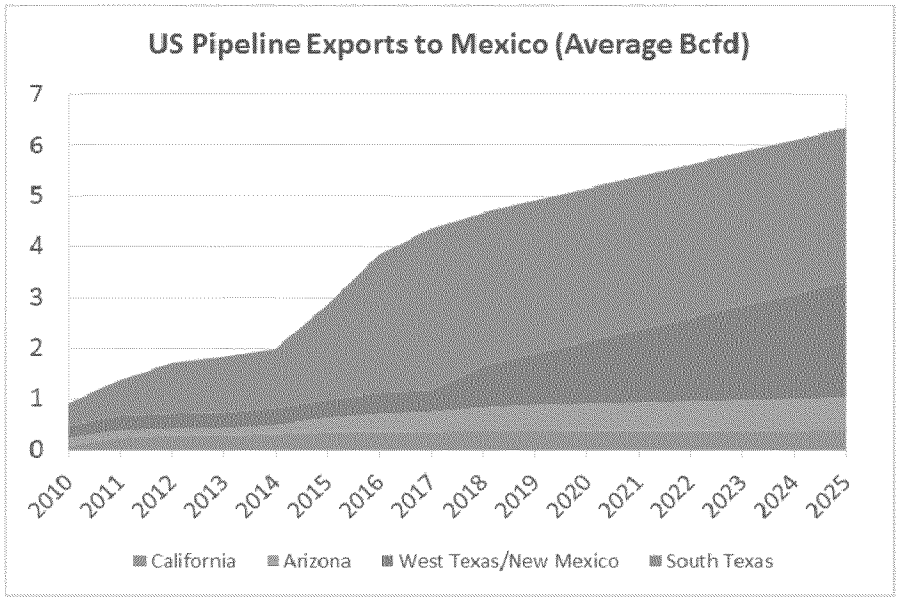


- Gas use rises for LNG exports, exports to Mexico, and power generation.
- Growth will be concentrated in the Eastern U.S., particularly along the Gulf Coast.
- LNG Exports off of the Gulf Coast lead the way – up to over 9 Bcfd by 2025.
  - "Second Wave" of LNG expansions possible around 2025.
- Mexico exports have significant upside, mostly from West Texas.
- Gas-fired power generation is a significant driver of Eastern U.S. growth.

ICF

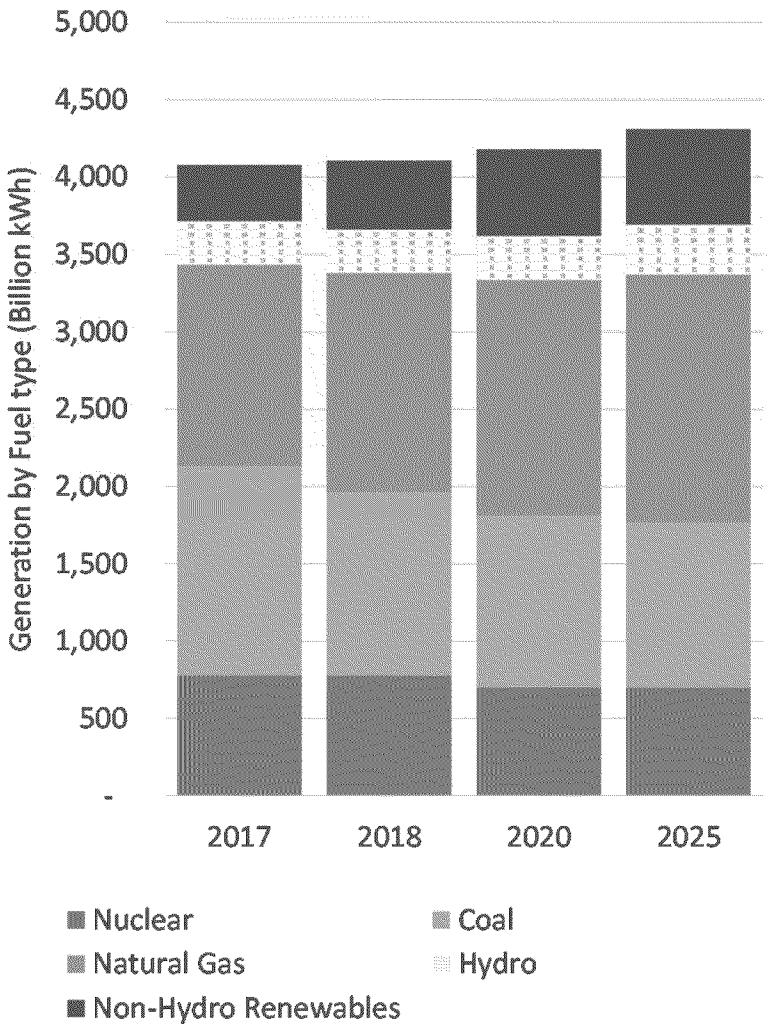
LNG and Mexico Exports are a Big Portion of the "New Market" Growth

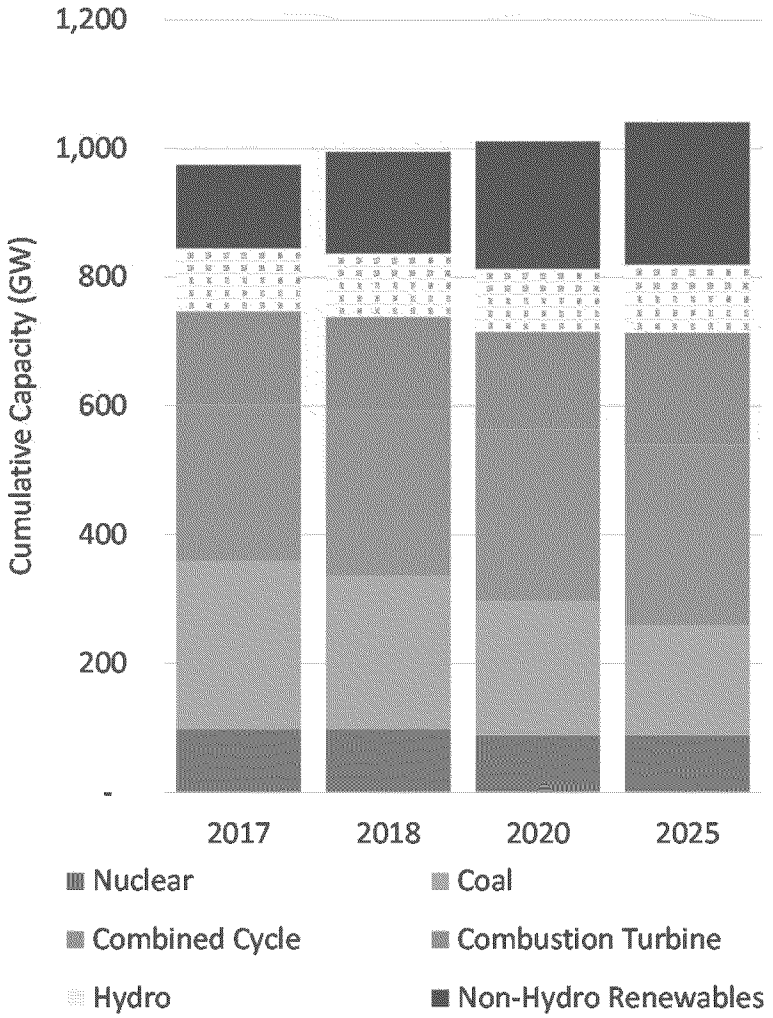




Significant UPSIDE for LNG and Mexico Exports

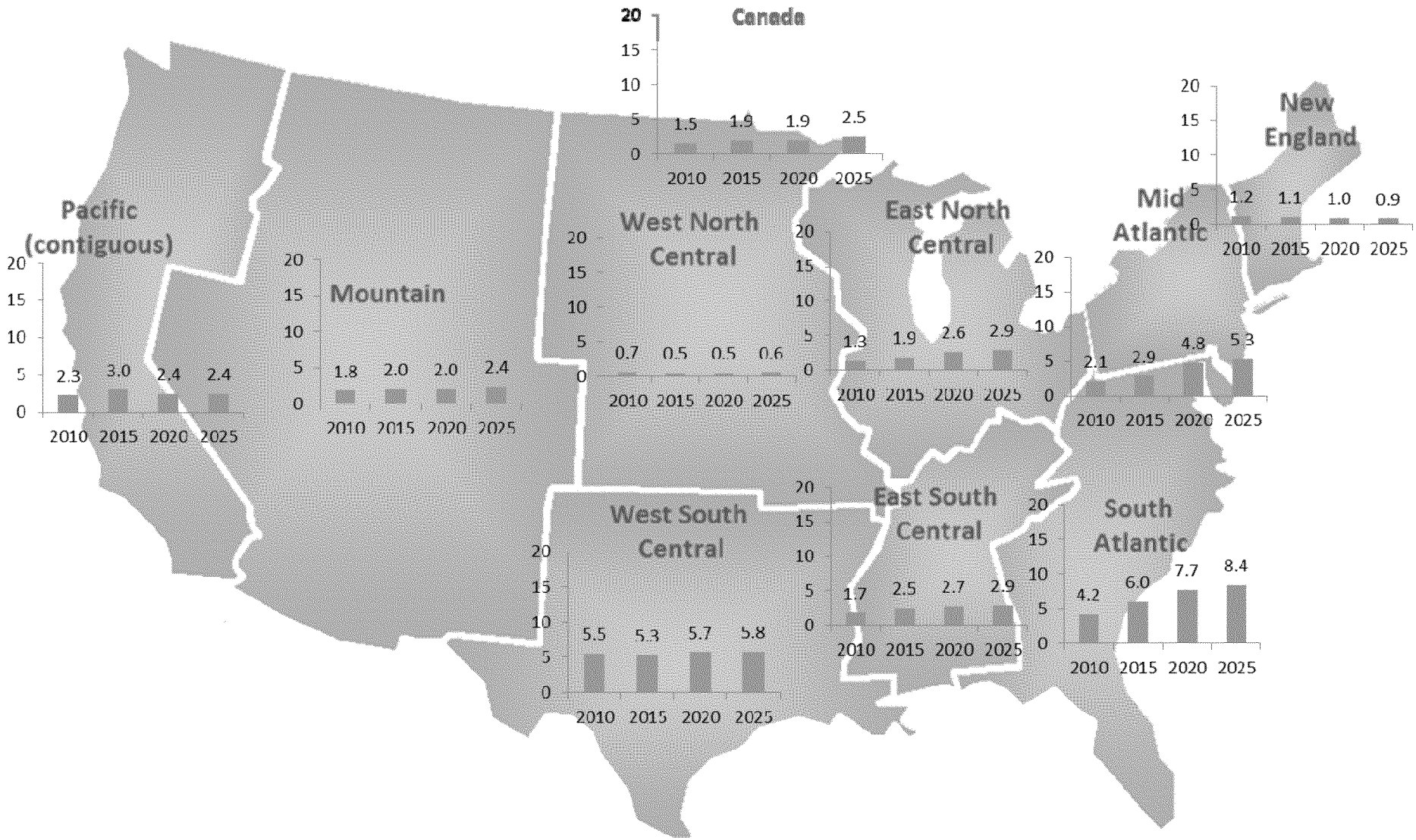
US Generation and Capacity Mix – Coal and Nuclear Down; Gas and Renewables Up





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ED_001523_00006095-00011

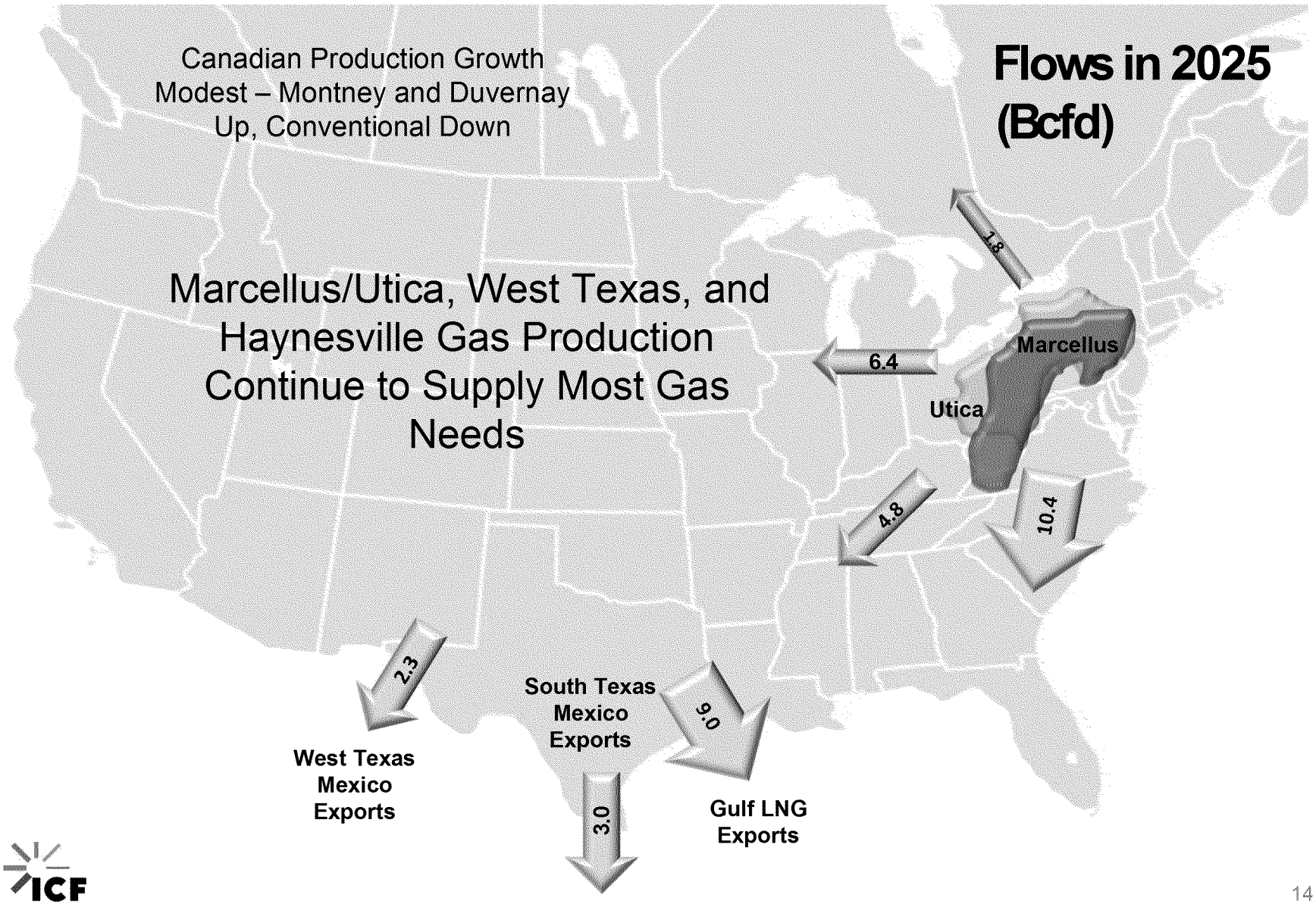
Regional Gas Use for Power Generation (Bcfd)



Overview of Gas Infrastructure (Pipeline) Development

- For API's study entitled *U.S. Oil and Gas Infrastructure Investment through 2035: An Engine for Economic Growth*, ICF projected that almost 50 Bcfd of new gas pipeline capacity would be added from 2017 through 2025, at a cost ranging from $100 to $150 billion.
- Pipeline development will be widespread to facilitate transport of gas from areas where supply is growing to budding markets.
- Hot spots for new capacity include:
  - Marcellus/Utica
  - West Texas
  - Haynesville
- Continued buildout of pipelines out of the Marcellus/Utica is very important because it limits gas price increases across the continent.

Pipeline Transport Shifting Significantly, with Northeast to Southwest Trend



Pipeline Development Projected to be Robust During the Next Few Years

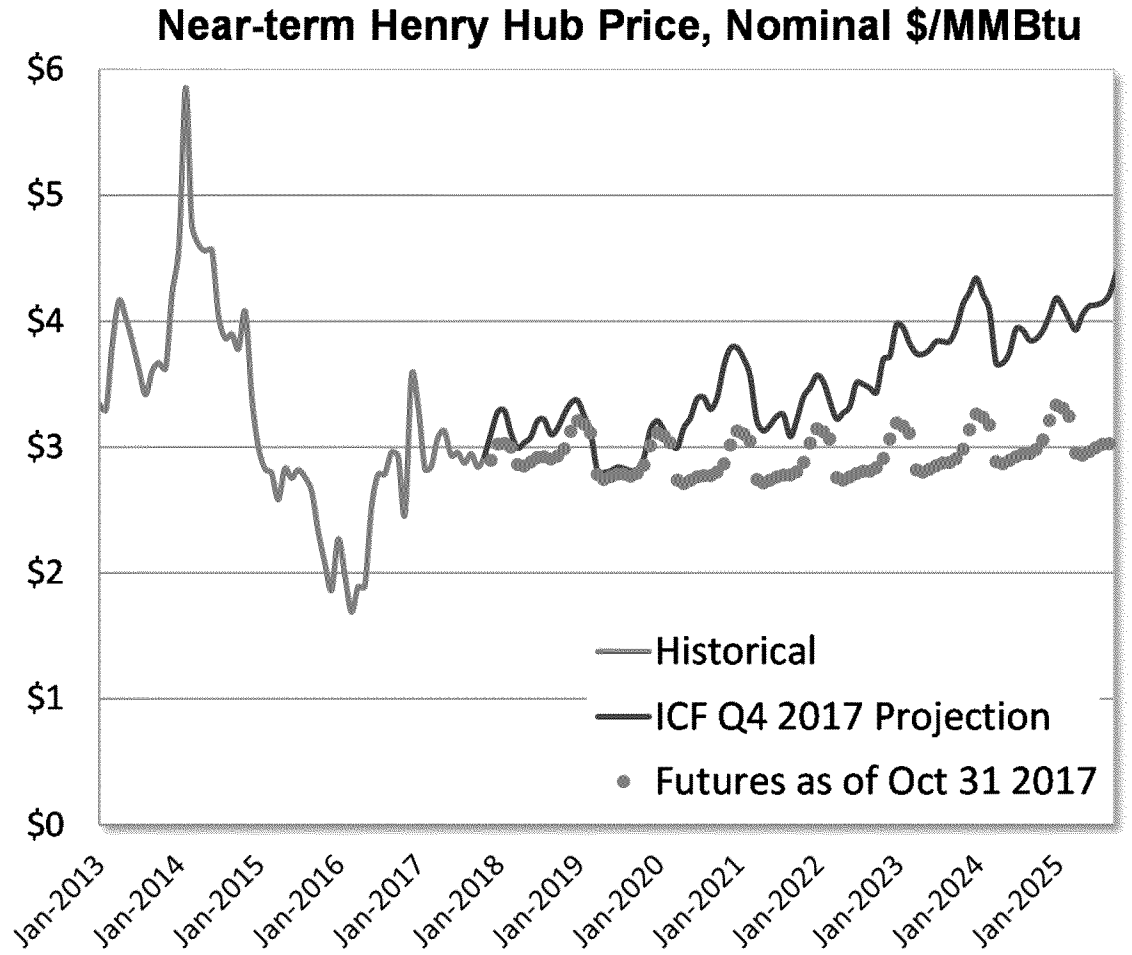
Area	Total Capacity (Bcfd)	Some Major Projects
Northeast U.S	10.7	Leach Xpress, Rover Pipeline Phase 1, PenneastPipeline, Atlantic Sunrise, Dominion Supplu Header, Atlantic Bridge, Rover
Canada	2.8	Dawn to Parkway 2017-Bright Compression, TCPL Vaughan PipelineLoop, Towerbirch Expansion Spruce Ridge Project
Gulf Coast	1.8	Impulsora Crossing, Nueces-Brownsville, Gulf Connector, Stratton Ridge, Lone Star, Hillabee Pipeline
West Texas	5.8	Gulf Coast Express, Pecos Trail Pipeline, Permian to Katy Pipeline
To Mexico	3.7	Impulsora Crossing Project, Nueces-Brownsville
Rockies West	0.0	N/A

- Roughly 25 Bcfd of new pipeline capacity will be placed into service with the completion of major projects during the next few years.
  - This tally does not include smaller localized projects.
- New capacity is needed to facilitate market growth.

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ED_001523_00006095-00015

Gas Prices Projected to Trade Between $3 and $4 at Henry Hub



Source for Historical and Futures Prices: ABB, Ventyx

- Difference between the futures strip and ICF's fundamentals view is likely due to level of market growth.
- Nevertheless, gas will continue to be priced attractively for most consumers.

Many Supply Areas Will Trade Below Henry Hub – Few Markets Trade Higher

Average Price Difference (i.e., Basis) Versus Henry Hub (Nominal $/MMBtu)	Past 24 Months	Next 12 Months	Following 48 Months
Marcellus and Utica (Dominion South Point)	($0.88)	($0.86)	($0.98)
Algonquin Citygates (New England)	$0.49	$0.87	$1.07
Haynesville Supply (Carthage Hub)	($0.08)	($0.06)	($0.06)
Chicago Citygates	($0.03)	($0.03)	($0.01)
MidContinent Supply (OK)	($0.27)	($0.34)	($0.19)
Houston Ship Channel	($0.01)	($0.04)	($0.03)
Opal	($0.20)	($0.33)	($0.22)
AECO	($0.92)	($0.65)	($0.54)
SoCal	$0.13	($0.11)	($0.00)
West Texas	($0.20)	($0.33)	($0.21)
South Texas	$0.00	($0.08)	($0.08)

ICF

Summarizing Gas Prices

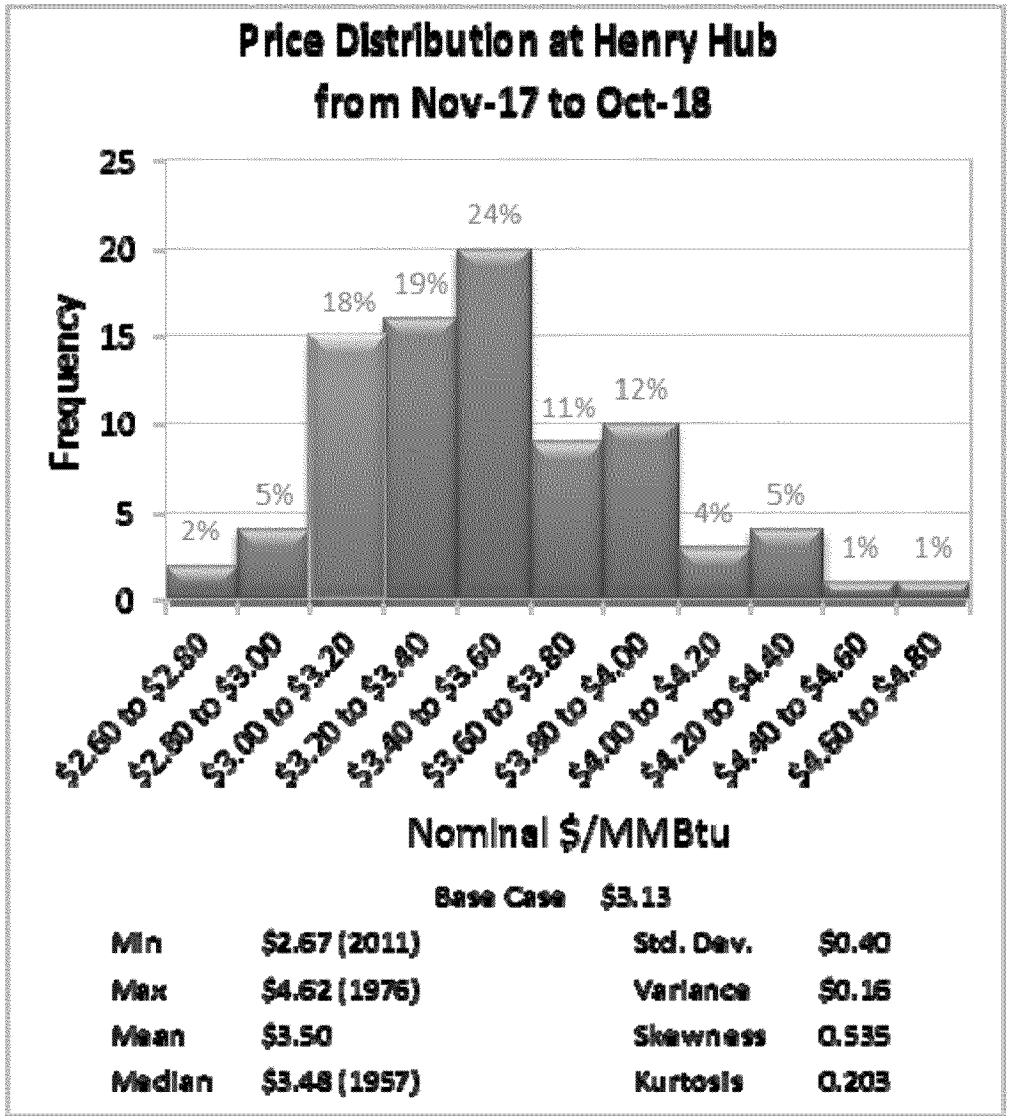
- Projected prices are likely to rise above levels observed during the past few years due to robust market growth.
- However, relatively high price elasticity for gas supply will limit price increases.
  - Continued improvement of well productivity is an important factor to watch.
- Henry Hub will trade at a premium, and gas prices at many other locations will be much lower.
  - Henry Hub can no longer be thought of as “the representative price for North American natural gas”.

Major Uncertainties for Market Development and Gas Prices

- Amount and Timing of Supply Development
- Pipeline Infrastructure Development
- Global Market Conditions – LNG Overhang and Oil Prices
- Regulatory Changes and Policies (e.g., resiliency NOPR)
- Weather

Example Sensitivity Analysis
(Potential Impact of Weather on Next Year's Gas Prices)

- **Gas prices can range from $2.60 to $4.80 over the next year, solely due to weather.**



Implications and Conclusions

- Market growth likely to be significant. Market transitioning from “supply push” to “demand pull” environment.
- Gas prices up gradually during the next decade – after all, gas is a commodity and “price cycling” is typical.
- Price increases limited by relatively high price elasticity for gas supply, with productivity increases affecting price levels.
- Continued development of pipeline infrastructure is imperative for supply development and market growth.
- Still much uncertainty for gas markets, with regulatory changes difficult to predict.

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Questions & Contact Information

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Managing Director, Natural Gas and Liquids Markets

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+1.703.218.2753

DISRUPTOR or DISRUPTEE

The Evolving Role of Natural Gas in Electricity

Eric Hsieh
Department of Energy

17cv01906 Sierra Club v. EPA

ED_001523_00006096-00001

INTRODUCTION

Take Home Messages

Poor Prediction Performance
Telling the future is a risky business

Natural Gas is an Adaptor
History provides a guide

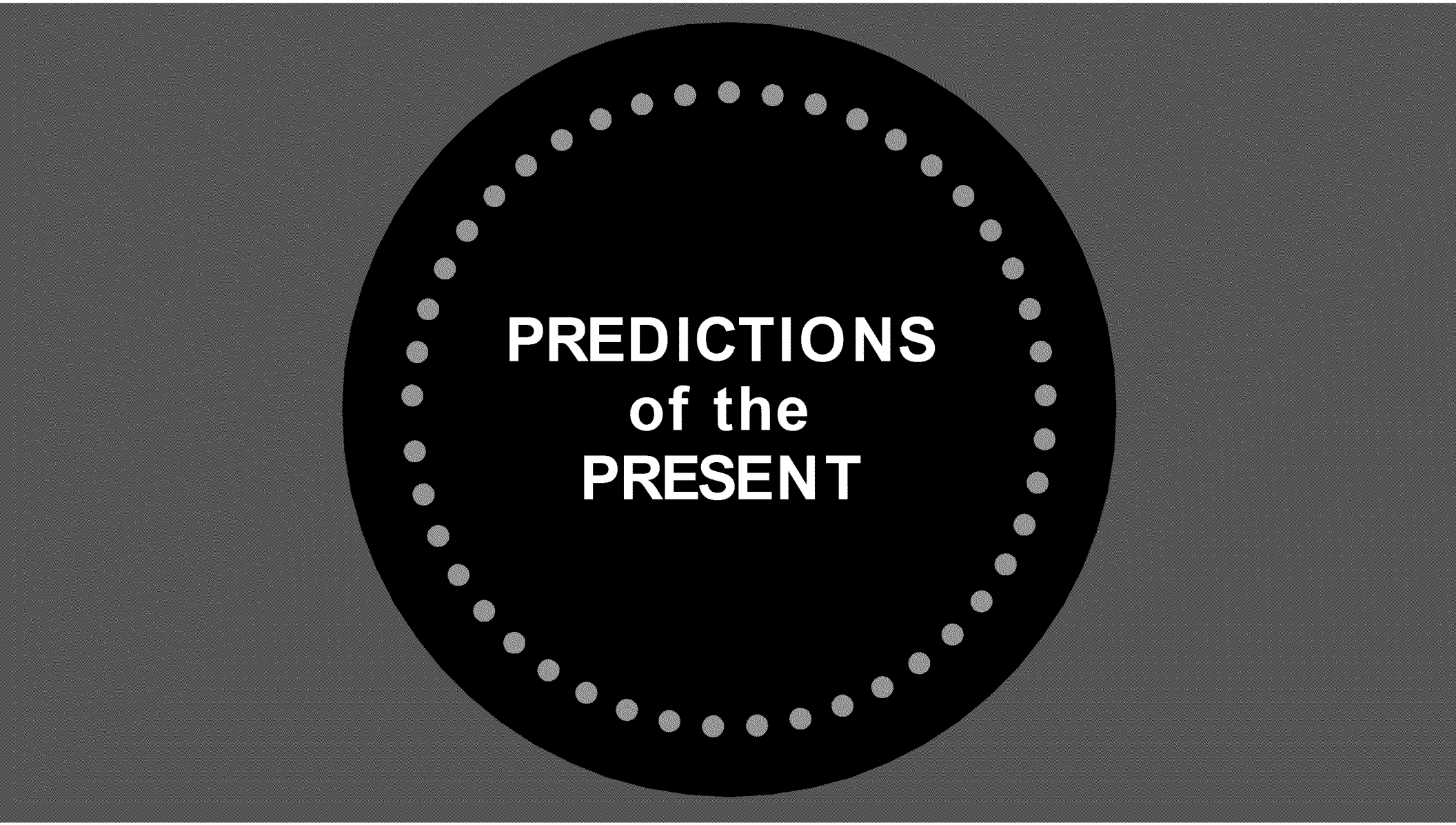
Paths Diverge in a Wood
And other Frostian wisdom

INTERACTIVE POLL

?

What is the furthest planning horizon in your organization?

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PREDICTIONS
of the
PRESENT

PRESENT

The history of predictions has been hazy

Electricity Load

Load growth has consistently underperformed expectations

Technology Prices and Adoption

New technologies have advanced faster or slower than anticipated

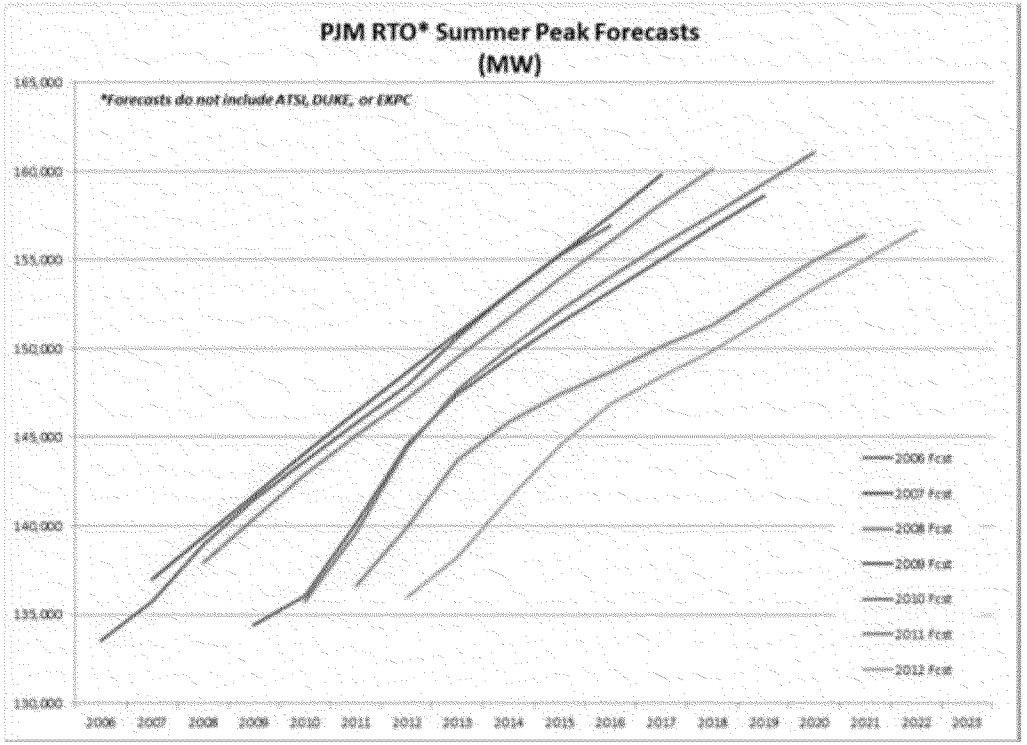
Fuel Prices

If you wait long enough, chances are you'll eventually be right

Load

PJM

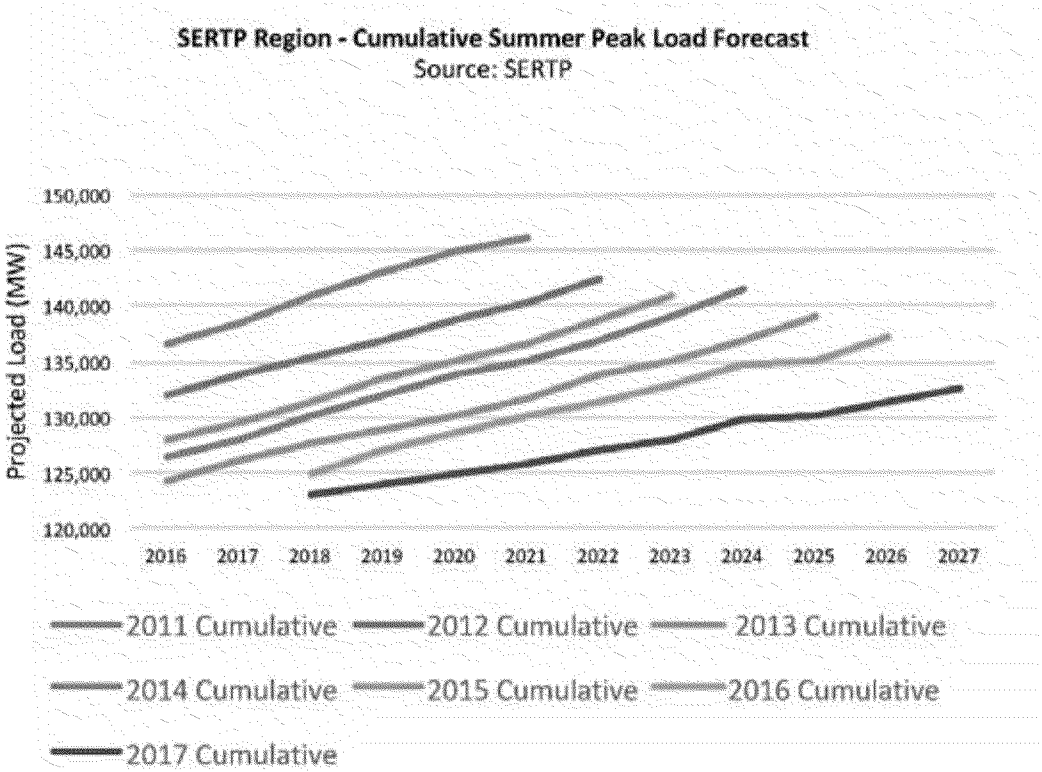
"Beginning with the Great Recession of 2007 2009, the accuracy of the PJM model decayed noticeably, with a trend towards over forecasting."



Source: PJM Resource Adequacy Planning Department "Load Forecasting Model Whitepaper," April 27, 2016

Load
Southeast

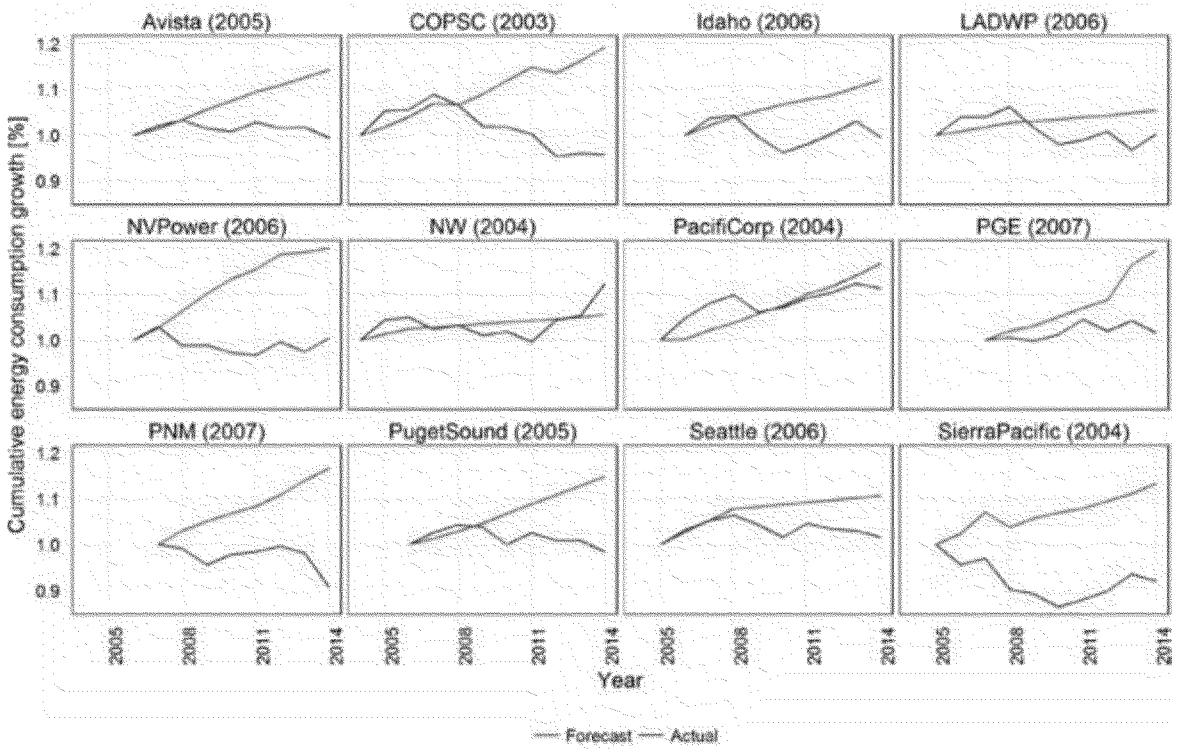
"…one does have to ask, how did they get it so wrong?"



Source: C Three, "North American Electric Transmission Market Forecast," August 2017

Load
West

"…there continued to be a systematic over estimation of load growth rates…"

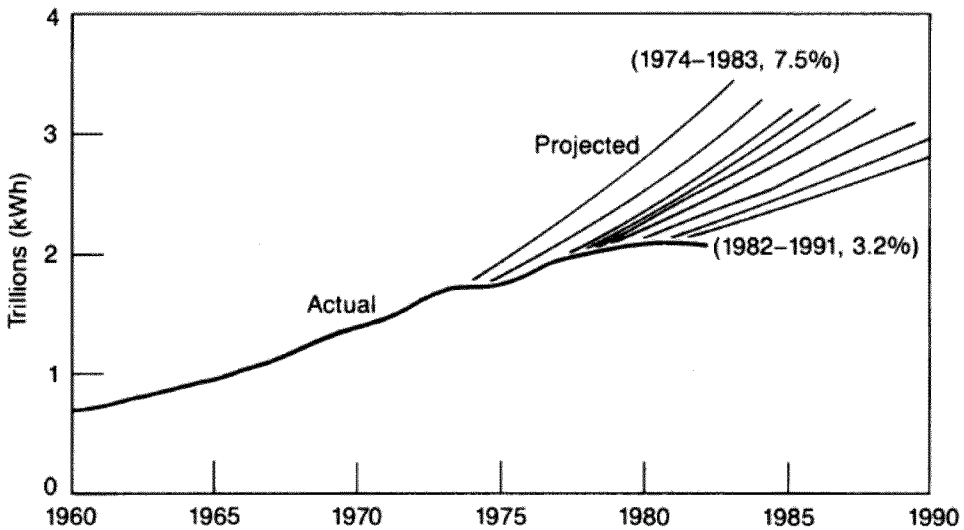


Source: Juan Pablo Carvallo, Peter H. Larsen, Alan H. Sanstad, Charles A. Goldman, "Load Forecasting in Electric Utility Integrated Resource Planning," October 2016, LBNL- 1006395

Load
National

"All forecasts are wrong. ...A more realistic expectation, especially for long term forecasts, is the insights on the various risks that may confront a utility."

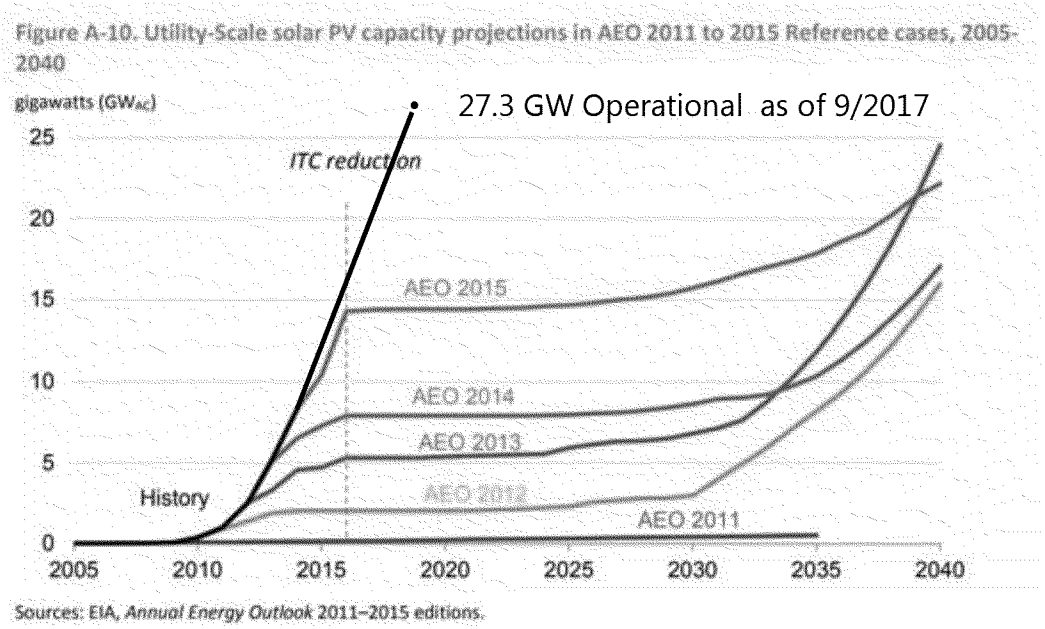
NERC Fan: Actual (1960-1982) and Projected (1974-1990)



Source: Tao Hong, Mohammad Shahidehpour, "Load Forecasting Case Study," January 15, 2015

Technology
Solar

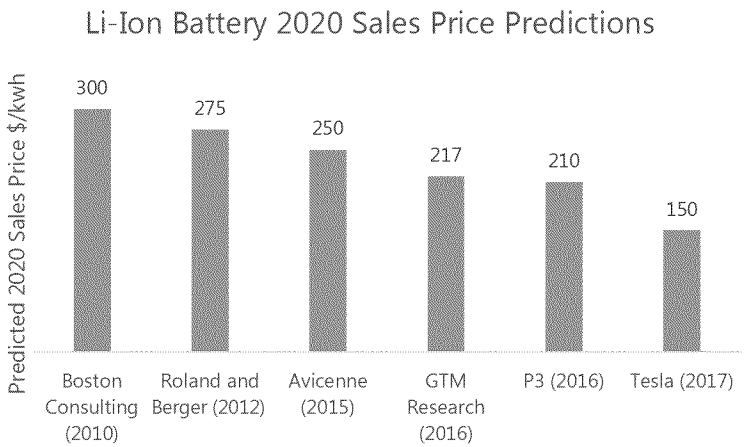
"These [projections] largely missed the rapid build out of utility scale solar PV projects."



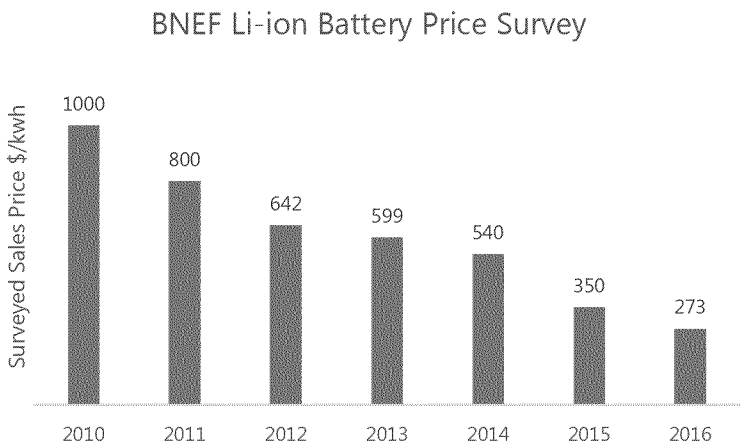
Sources: EIA, "Wind and Solar Data and Projections from the U.S. Energy Information Administration: Past Performance and Ongoing Enhancements," March 2016
Colin Smith, "U.S. Utility PV Market: Quarterly Update," GTM Research, September 2017

Technology
Storage

"Updated data that indicate lower battery costs have increased EIA's outlook for BEV and PHEV sales."
EIA AEO 2017



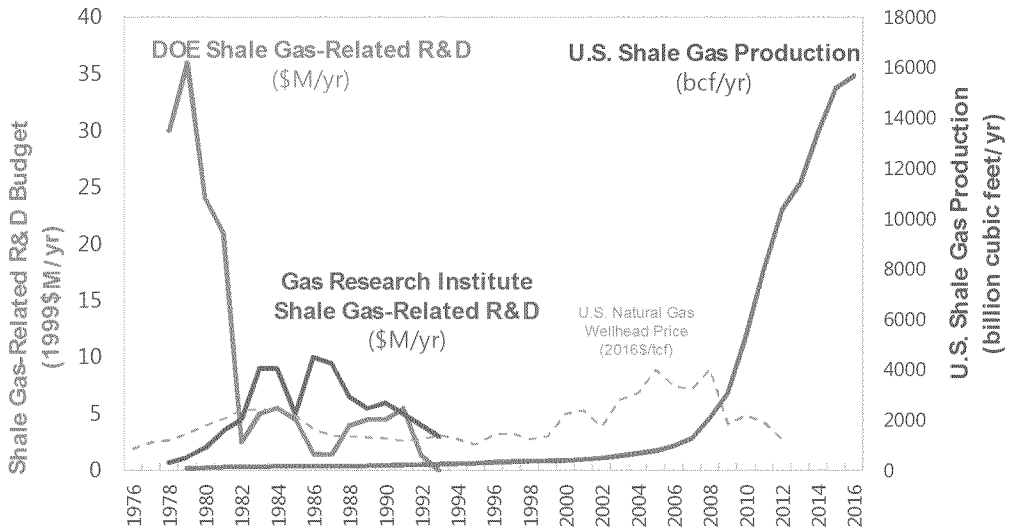
Source: Berckmans et at., "Cost Projection of State of the Art Lithium-Ion Batteries for Electric Vehicles Up to 2030," Energies 2017, 10, 1314; doi:10.3390/en10091314



Source: Clare Curry, "Lithium-ion Battery Costs and Market," Bloomberg New Energy Finance, July 5, 2017

Technology
Shale Gas Production

"...the convergence of a number of factors, including key technology developments, government policy, and market forces, coalesced to bring about the shale gas revolution."



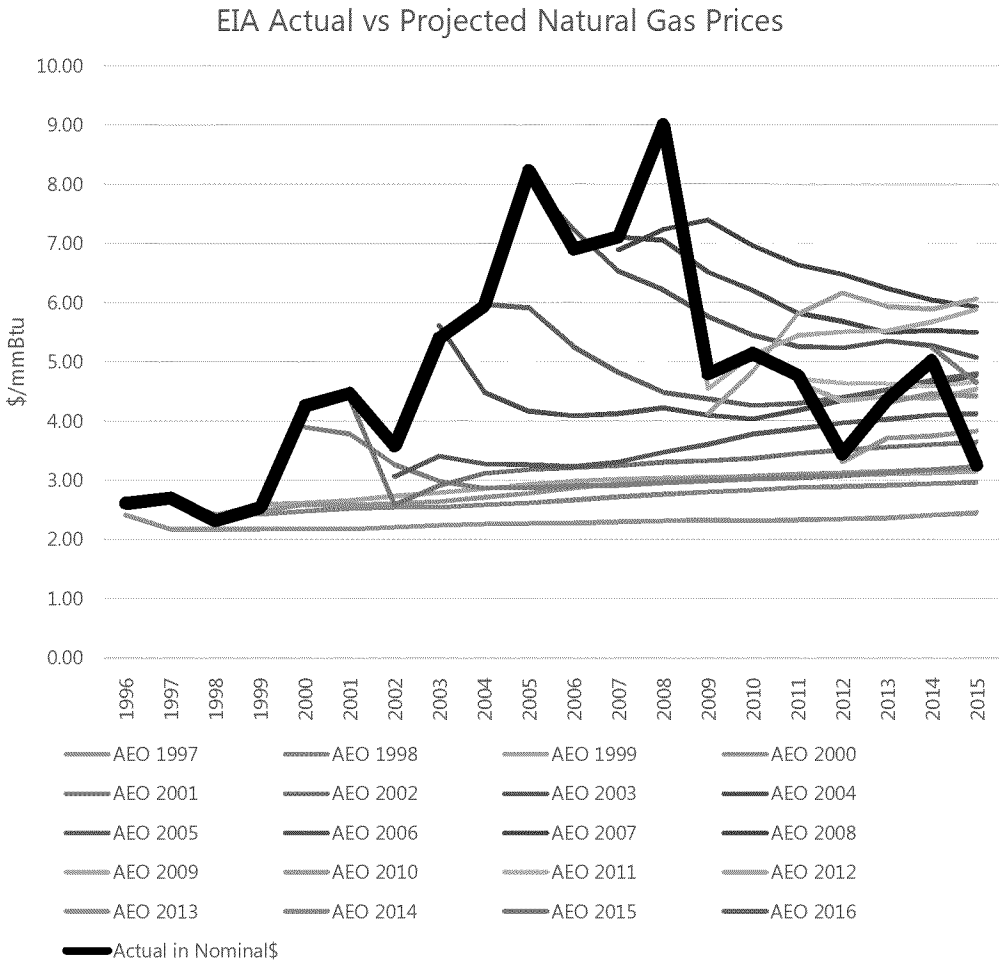
Technology	Level of DOE Influence
Fracture technology for tight gas	Influential
Improved oil and gas drilling: horizontal, deviated, and extended	Absent/Minimal
3-D seismic imaging	Absent/Minimal
Diamond drill bits	Direct

Source: Robert Horner, "Federal Government Contributions to the Shale Gas Revolution," DOE/EPSA Internal Memo, June 14, 2017

Fuel

Natural Gas Prices

"...the absolute percent differences [between the AEO projections and realized outcomes] for energy prices range between 10% and 40%."

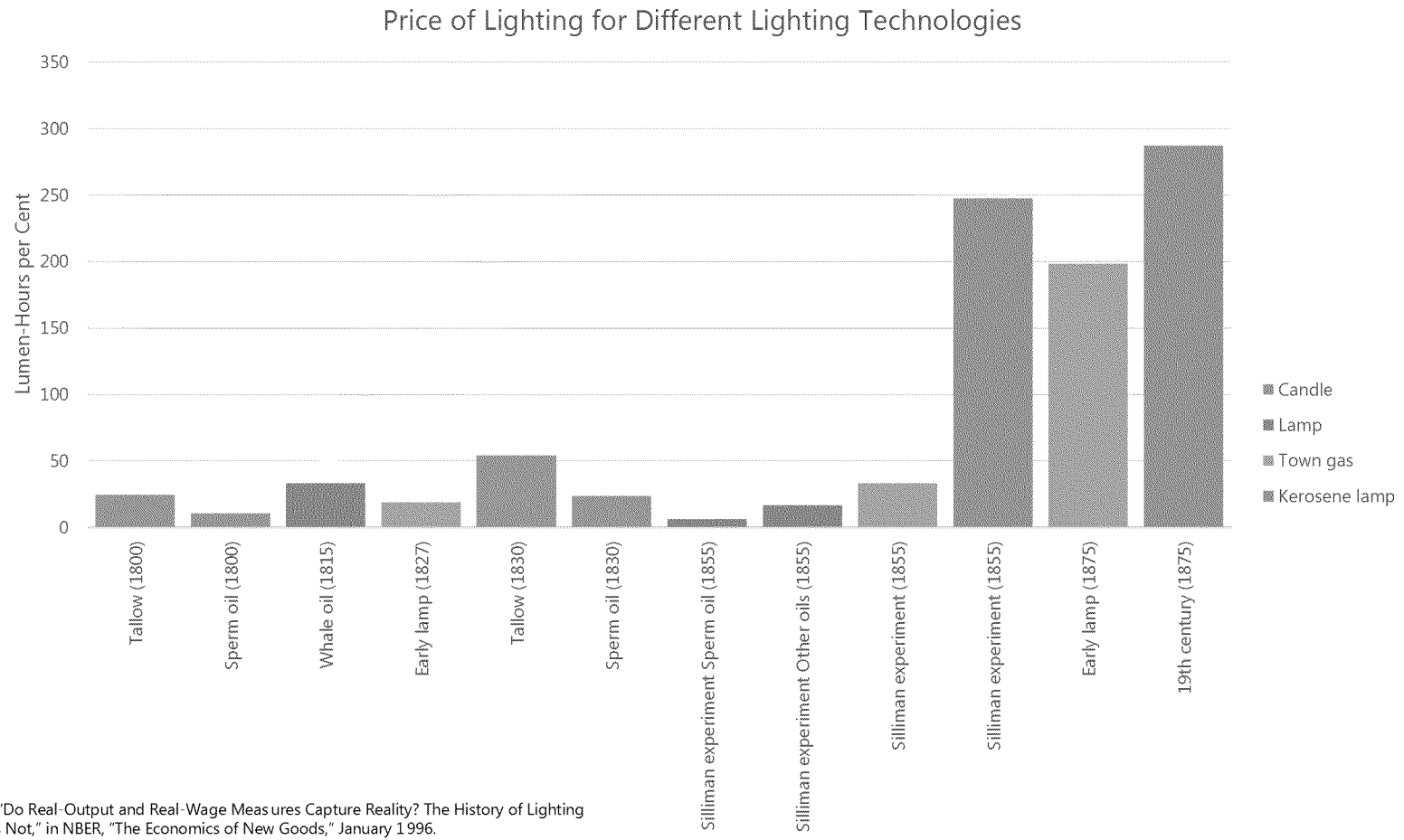


Source: EIA, "Annual Energy Outlook Retrospective Review, Table 7a," September 19, 2017

LESSONS from the PAST

Light

Improvements in lighting value over time



Source: William D. Nordhaus, "Do Real-Output and Real-Wage Meas ures Capture Reality? The History of Lighting Suggests Not," in NBER, "The Economics of New Goods," January 1996.

1870s

Natural Gas as Disruptee

1870s

- "Virtually all manufactured gas sold during this period was used for lighting." – Troesken

1878

- "Even before Edison demonstrated a working lamp, gas stocks began to fall in price." – Smithsonian

1879

- Edison lighting demonstration at Menlo Park

1882

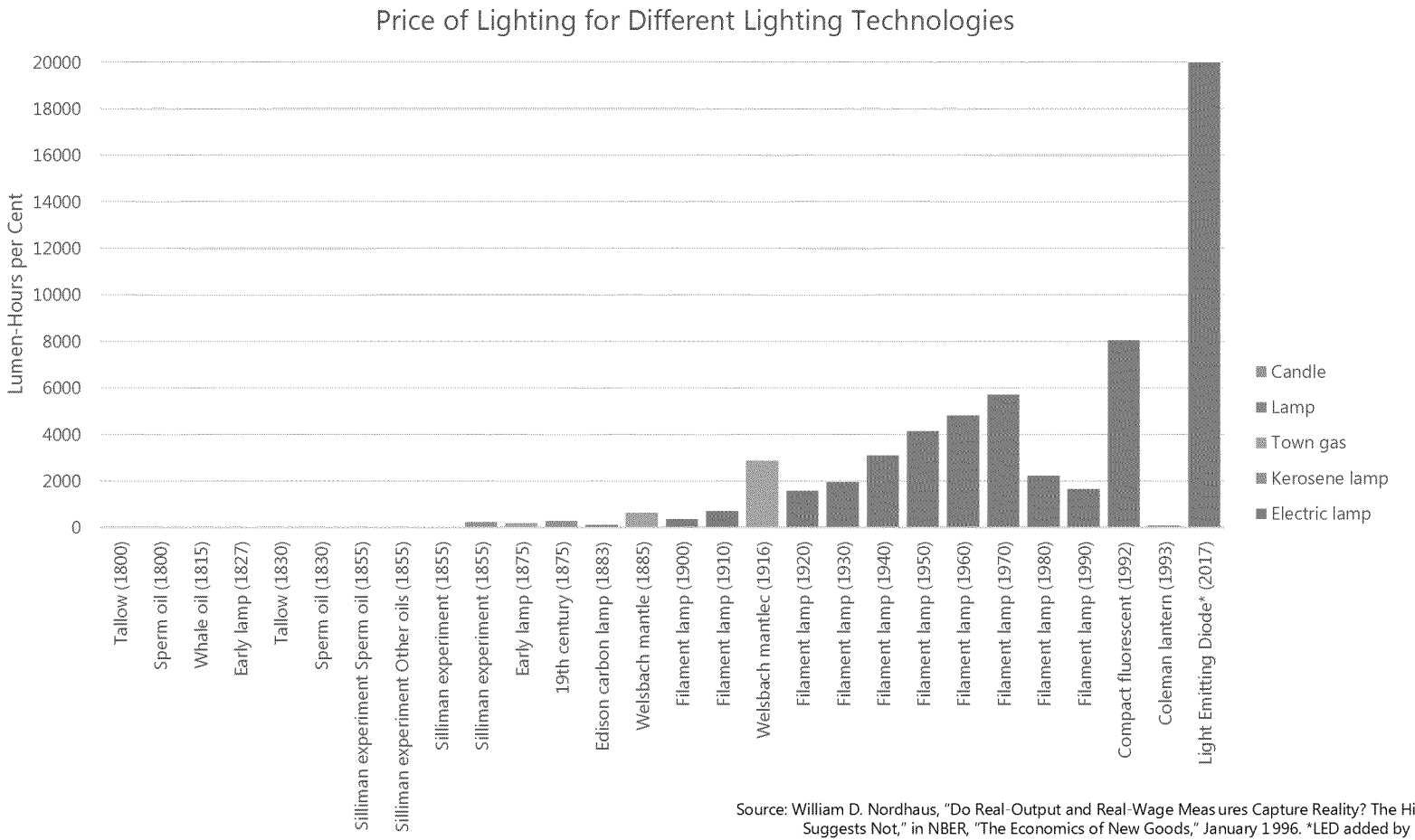
- Pearl Street Station opens



Sources: Werner Troesken, "The Institutional Antecedents of State Utility Regulation: The Chicago Gas Industry, 1860 to 1913," in NBER, "The Regulated Economy: A Historical Approach to Political Economy," January 1994
Smithsonian Institution, "Lighting A Revolution," May 2017, http://americanhistory.si.edu/lighting/19thcent/comp19.htm, Accessed 11/1/2017
Image from Richard Warren Lipack / Wikimedia Commons. http://ethw.org/Edison%27s_Electric_Light_and_Power_System

Light

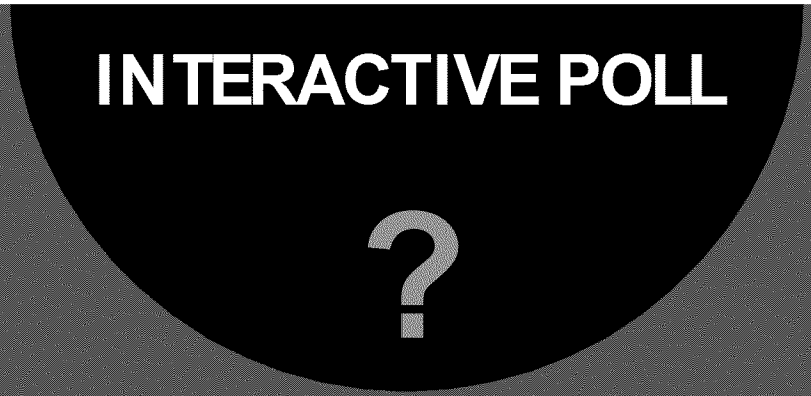
Improvements in lighting value over time



Source: William D. Nordhaus, "Do Real-Output and Real-Wage Meas ures Capture Reality? The History of Lighting Suggests Not," in NBER, "The Economics of New Goods," January 1996. *LED added by author.

"It was the good fortune of the [1880s] gas industry that it found and developed a new market for its product – space heat and manufacturing process heat – even as the market for illuminating gas was being snuffed out by electric lighting."

—James Utterback, *Mastering the Dynamics of Innovation (1994)*



Compared to 10 years ago, is the pace of change in your organization slower, about the same, or faster?

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Fuels

Generating Change

Change is Constant

The generation fuel mix has evolved considerably since the 1950s

Change can be Fast or Slow

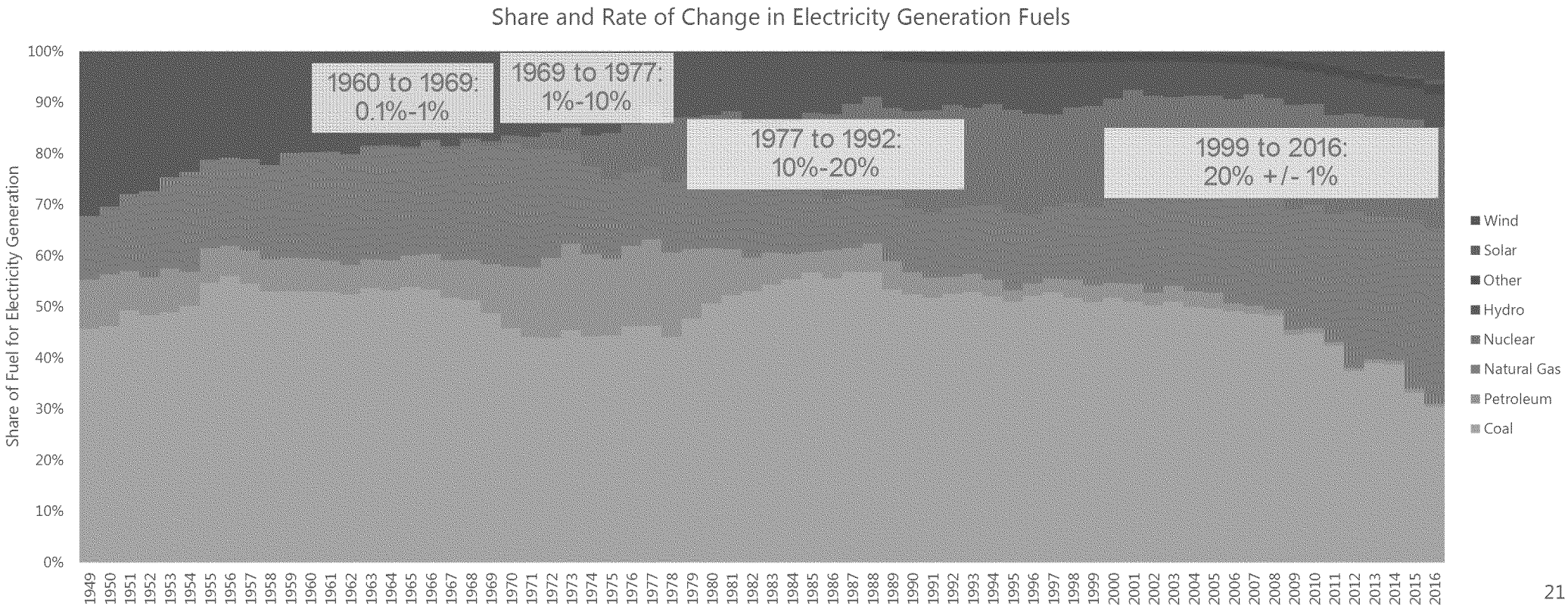
New technologies have varied speeds of adoption or displacement

Change has Accelerated

A proposed metric for quantifying fuel mix changes

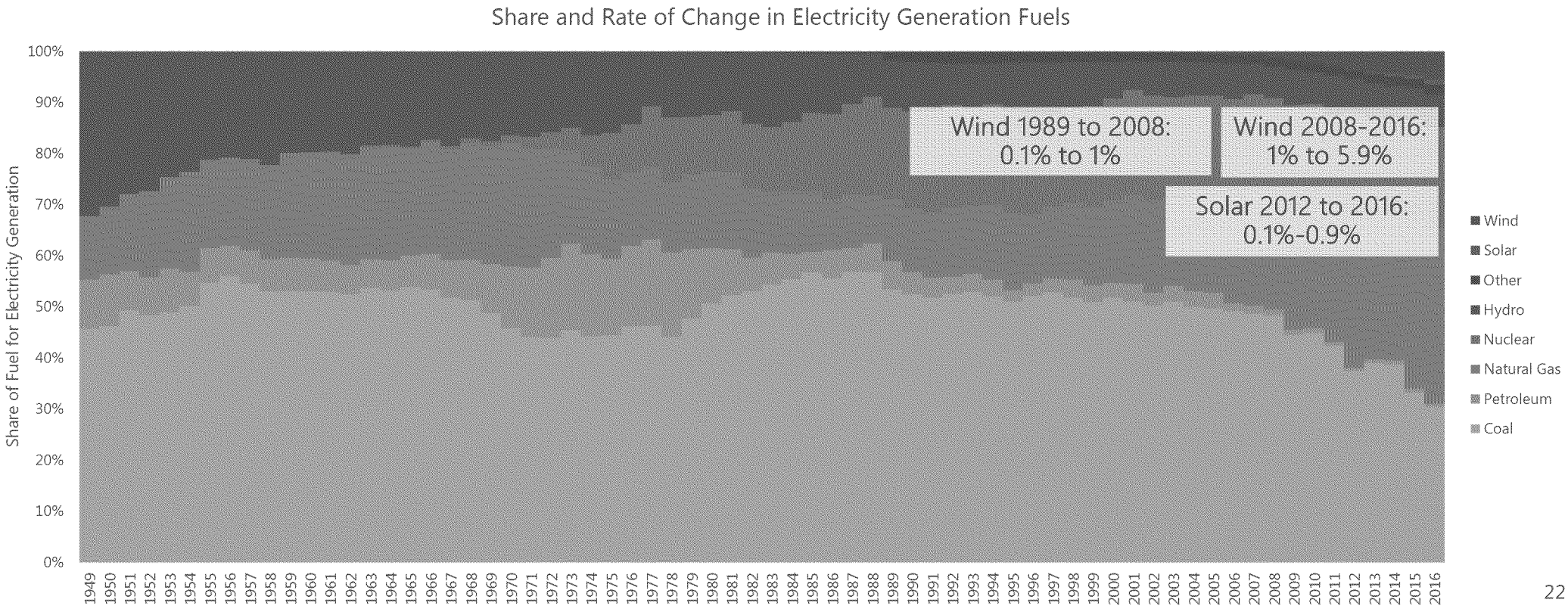
Constant Change

Nuclear: ~~Rapid, Gradual, Steady~~



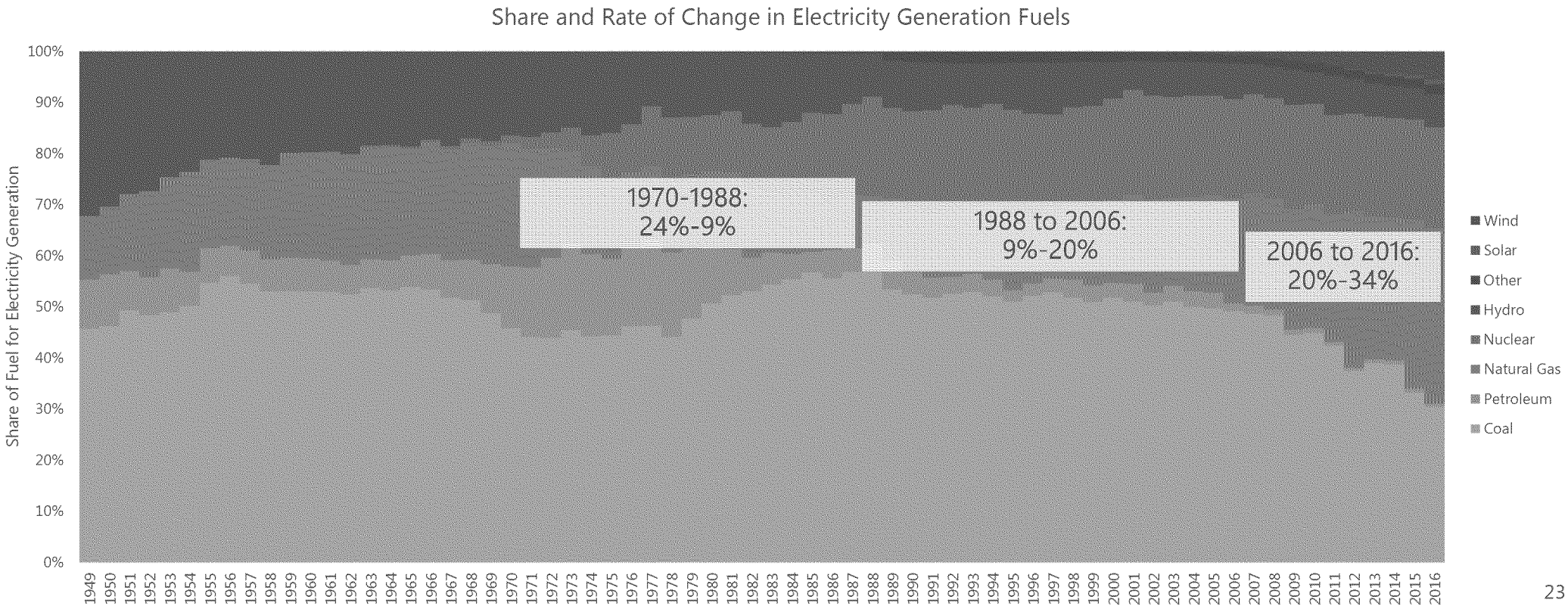
Constant Change

Renewables: Slow Growth, Fast Growth



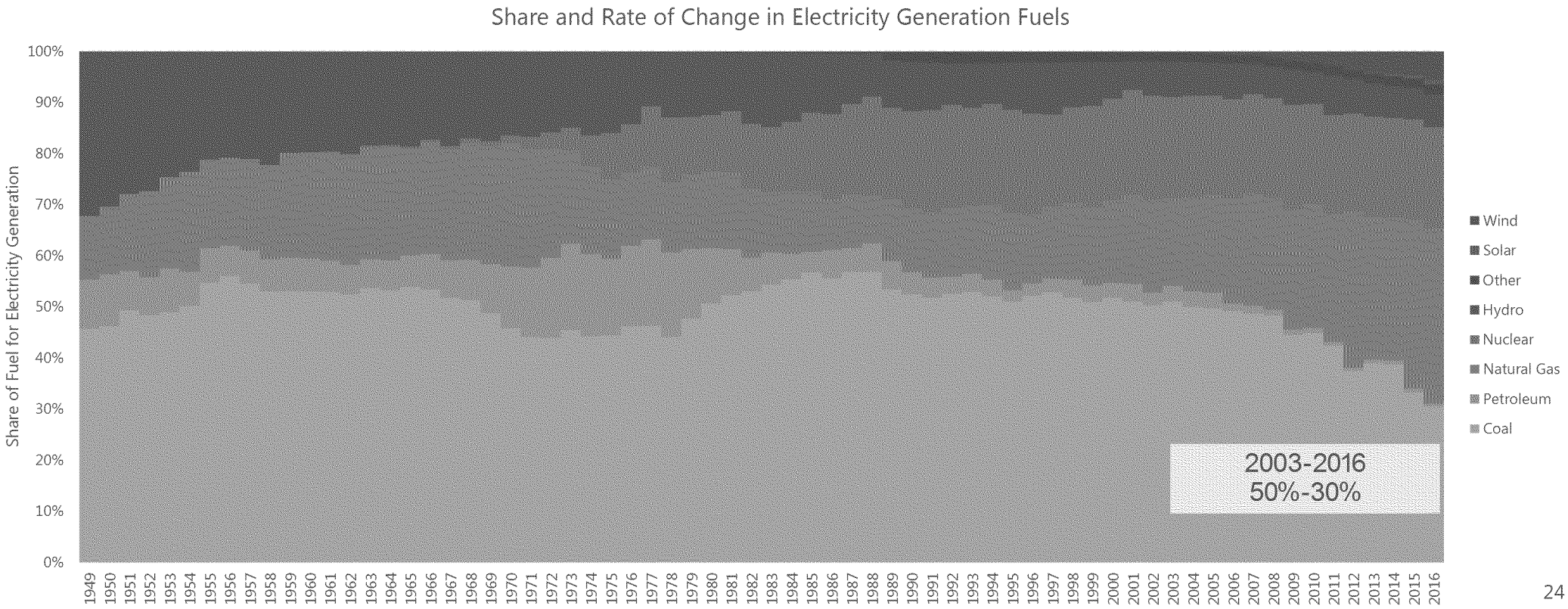
Constant Change

Natural Gas: Decrease, Growth, Faster Growth



Constant Change

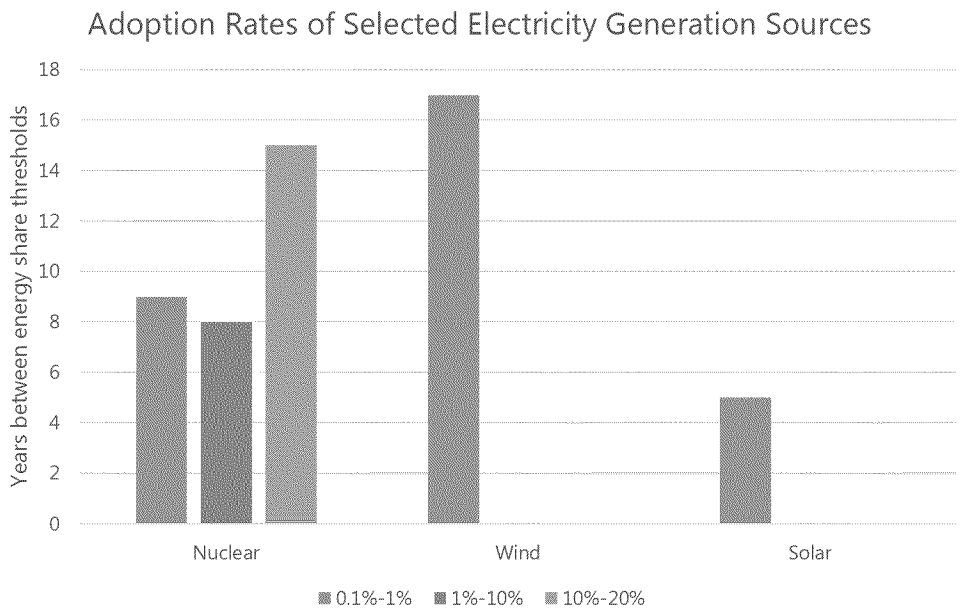
Coal: ~~Steady~~ Decrease



Fast or Slow

New technologies have varied in adoption speed

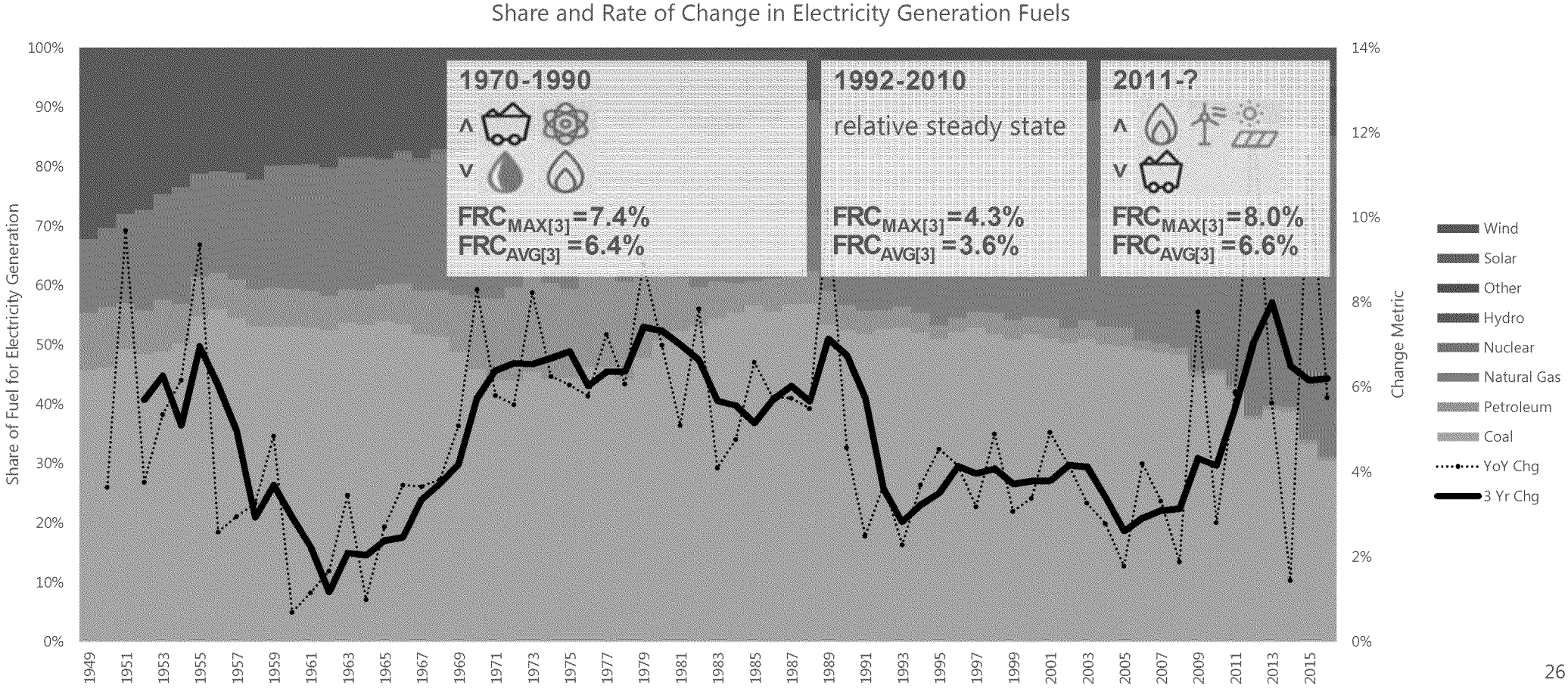
- Nuclear: 32 years to reach 20% energy share
- Wind: 25 years between first appearance on EIA data and 1% threshold
- Solar: nearly a decade of accelerating adoption rates



Accelerating Change

Fuel Rate of Change Metric: Highest Observed Index in 2013

= SUM[(*fuels f*)]{abs(PCT)}



Trends

From the Staff Report on Electricity Markets and Reliability

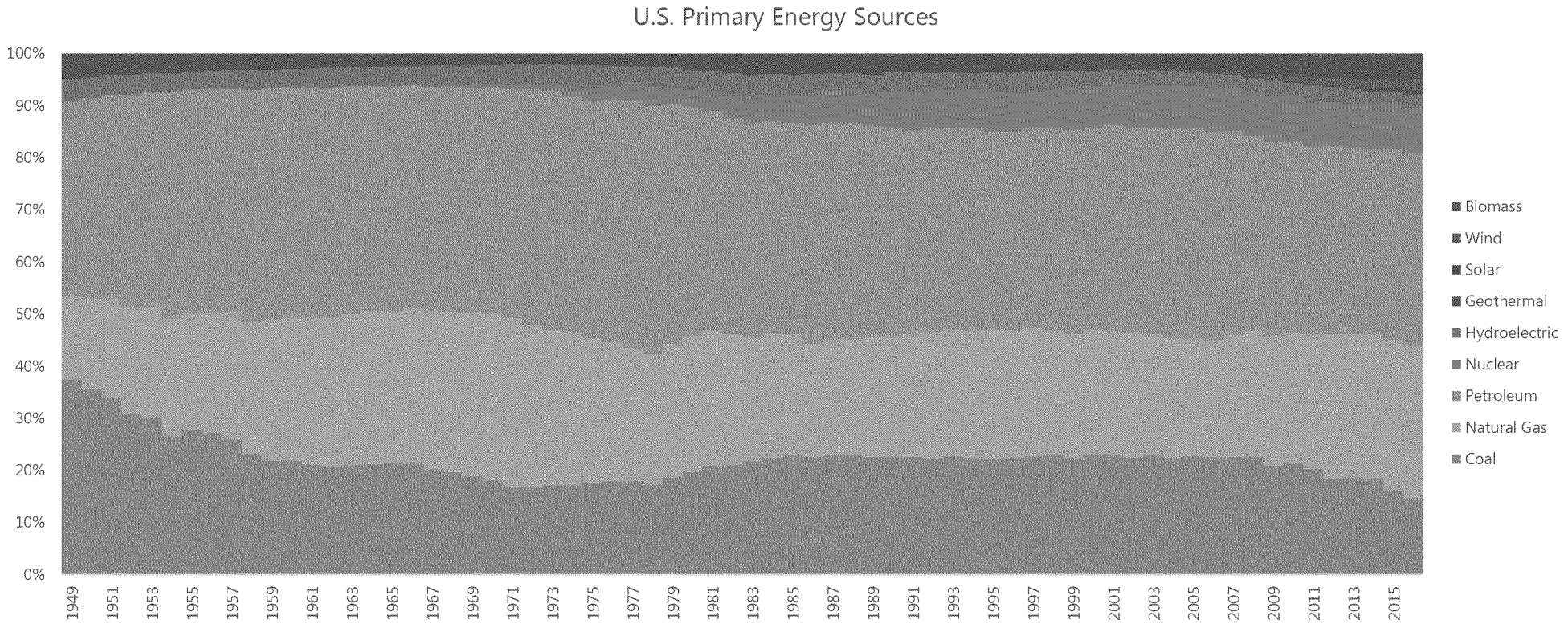
"The low price of natural gas has resulted in the competitive displacement of coal in many of the Nation's markets."
(p. 113)

"Since 2007, the contribution to total generation from wind and solar has grown quickly, accelerated by government policies and mandates."
(p. 13)

"High penetration of VRE into the wholesale electricity markets could increase cycling of conventional power plants."
(p. 154)

All Energy

Natural gas: a major primary energy source since the 1950s



INTERACTIVE POLL

?

How will the rate of change in generation fuels over the next 20 years compare to the last 20?

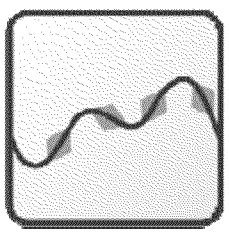
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DIVERGING PATHS
to the
FUTURE

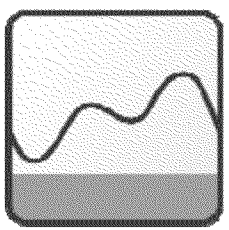
Possibilities

Potential roads ahead for natural gas

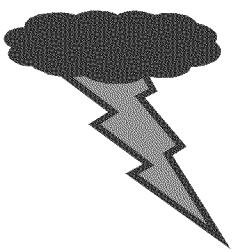
1. Ramp-focused future



2. Energy-Centric Dispatch



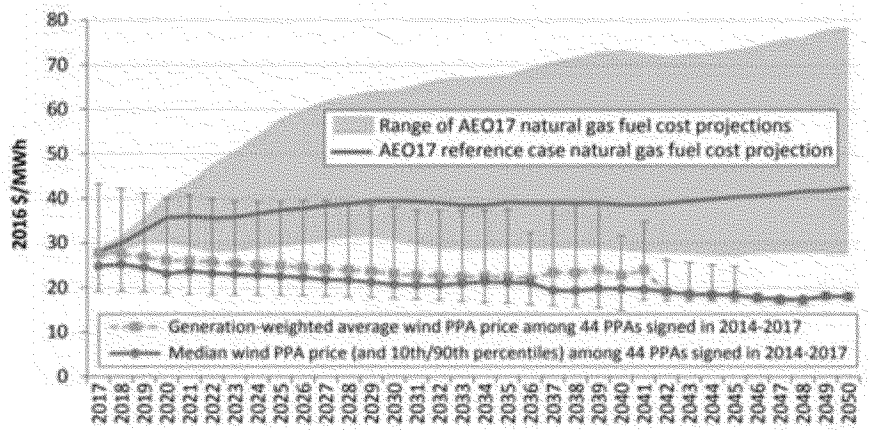
3. Reliability



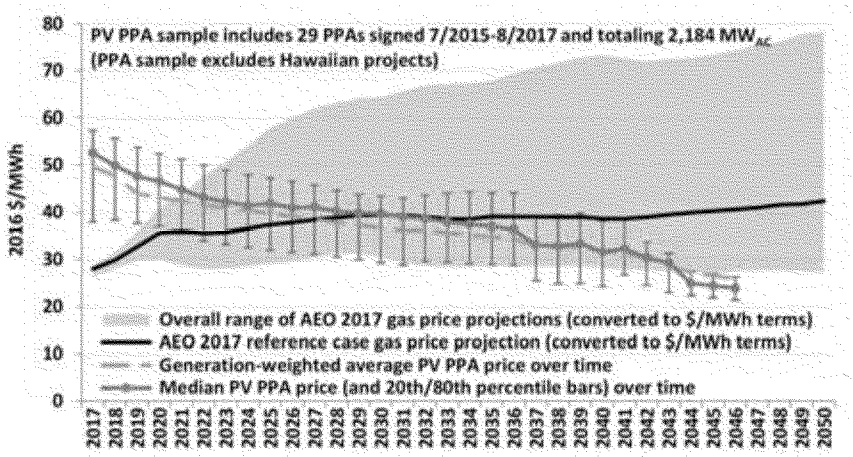
1

Increased Ramp Dispatch with VERs

"…[U]tilities have increasingly begun replacing expensive fuel through self built renewable generation." Dumoulin Smith



Source: Ryan Wiser, Mark Bolinger, "2016 Wind Technologies Market Report: Summary," August 2017



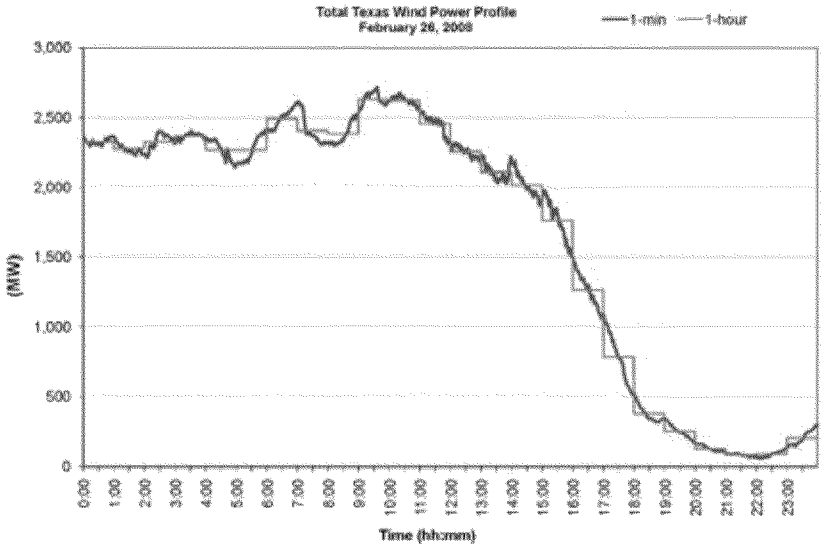
Source: Julien Dumoulin-Smith, "Turning on the lights: an electric utilities, power, and renewables overview," Bank of America Merrill Lynch, October 23, 2017

Source: Mark Bolinger, Joachim Seel, Kristina Hamachi LaCommare, "Utility-Scale Solar 2016 ," September 2017

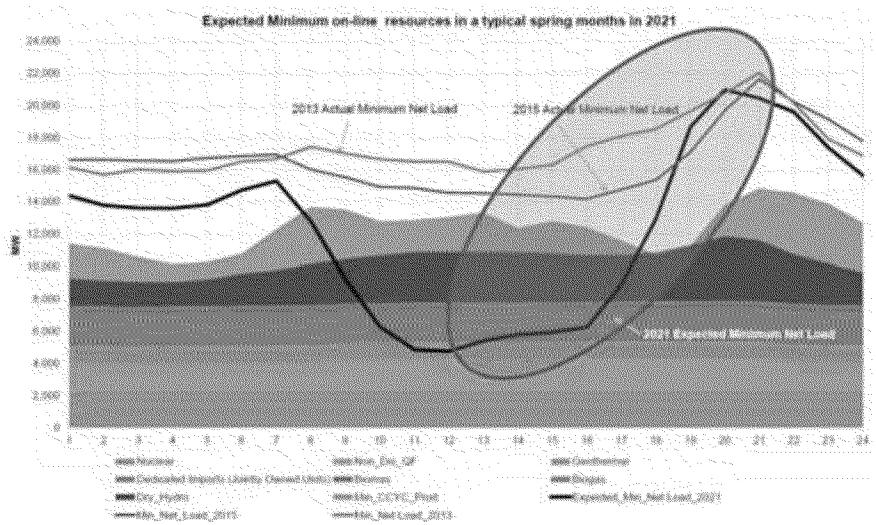
1

Increased Ramp Dispatch with VERs

"The ISO has identified a growing need for downward flexible capacity to address over generation." CAISO



Source: Yih-huei Wan, "Analysis of Wind Power Ramping Behavior in ERCOT," March 2011, NREL/TP-5500-49218



Source: CAISO, "Flexible Resource Adequacy Supplemental Issue Paper," Nov. 2015

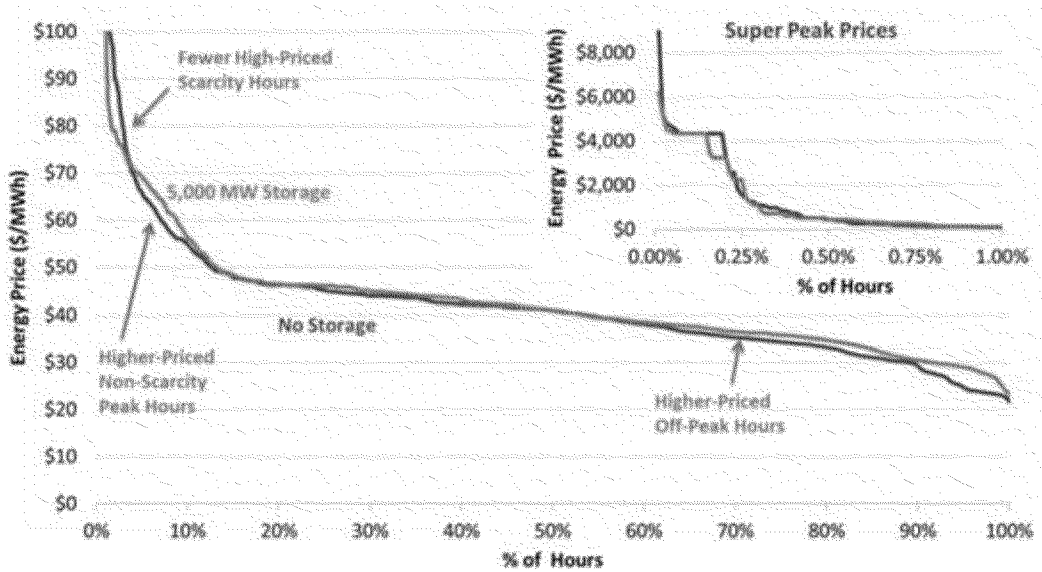
17cv01906 Sierra Club v. EPA

ED_001523_00006096-00033

2a

Increased Energy Dispatch with Storage

"[P]lants recover their fixed costs…in somewhat more predictable fashion than on the system without storage." Brattle



Source: Brattle, "The Value of Distributed Electricity Storage in Texas," March 2015

2b

Increased Energy Dispatch with Electric Vehicles

"Customers took advantage of time based rates to save on overnight residential charging." DOE

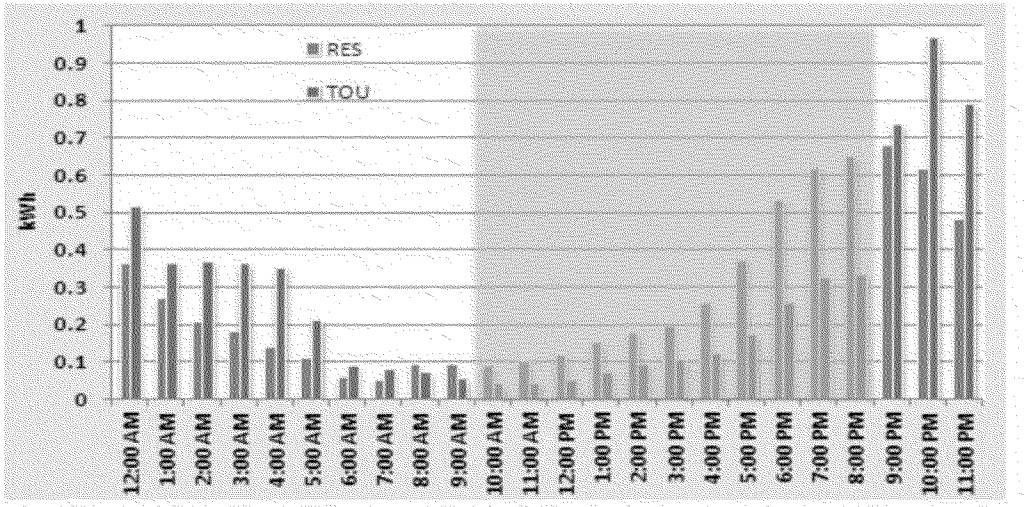


Figure 11. Charging Patterns with (TOU) and without (RES) Whole House Time-of-Use Rate during Summer Weekdays at Progress Energy (Peak period is in gray)

Source: DOE, "Evaluating Electric Vehicle Charging Impacts and Customer Charging Behaviors," December 2014

3
Reliability

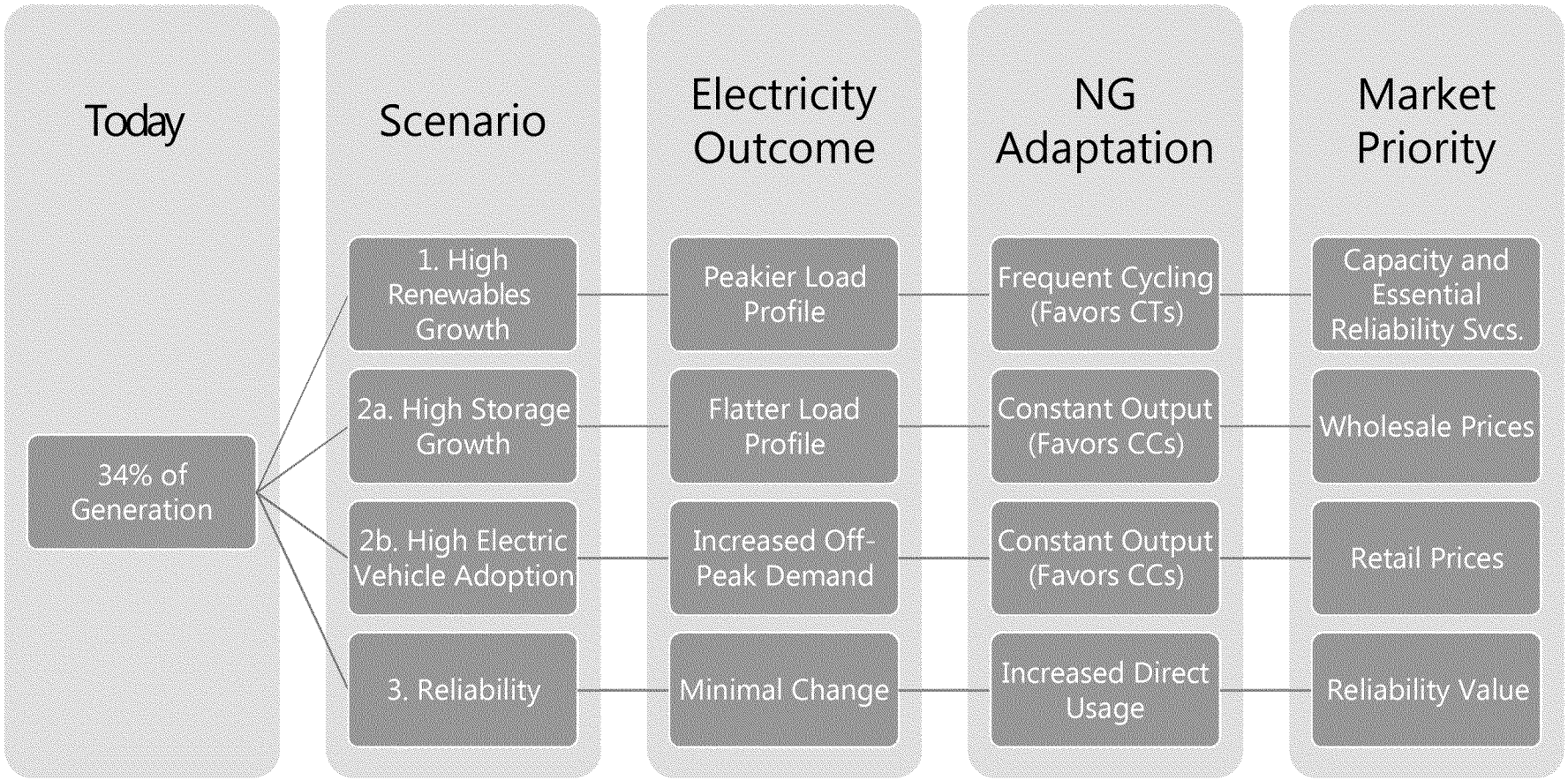
"If your power goes out, your generator comes on automatically."



Source: Washington Post Express, Advertisement, September 15, 2017

Decisions

Scenarios for potential future roles of natural gas



Financial Flows

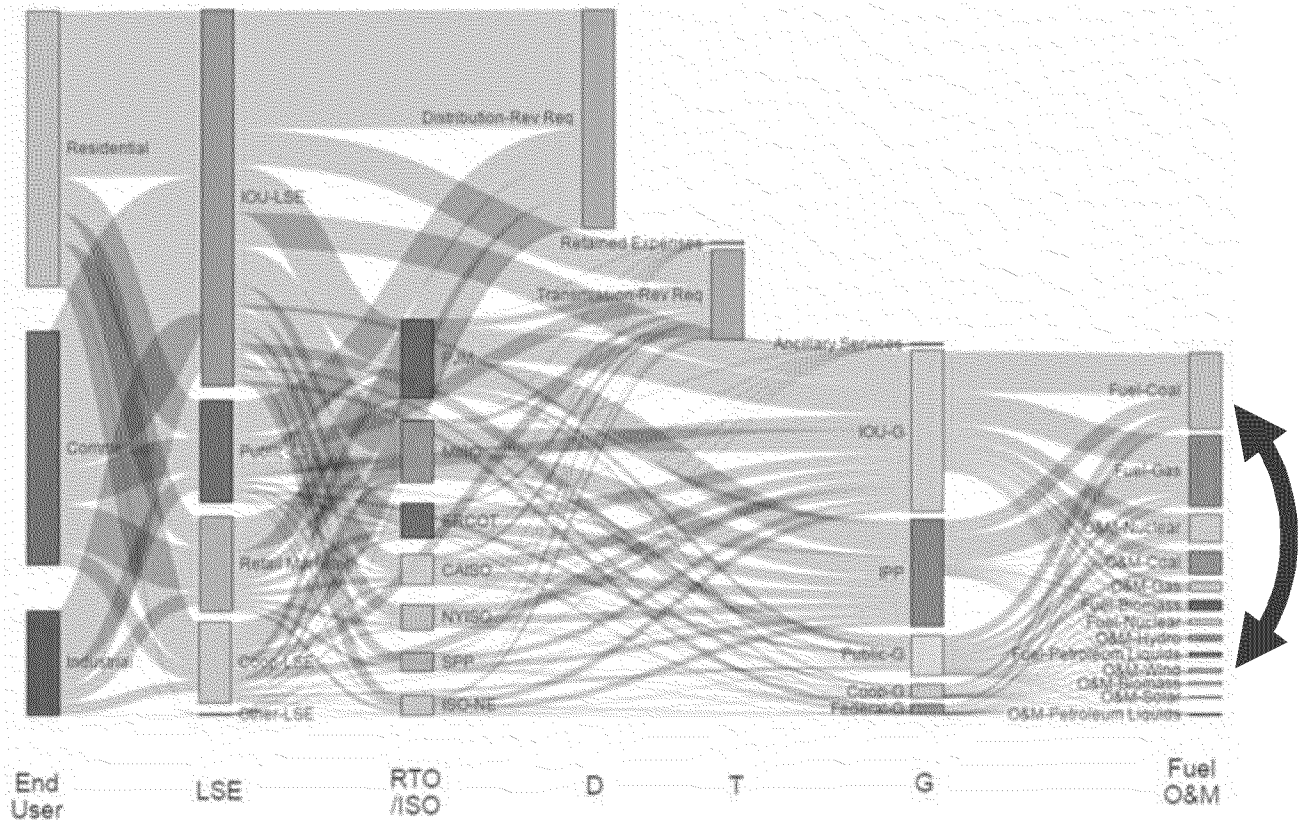
Scenarios that involve competition among generation fuels

1. High Renewables Growth

2a. High Storage Growth

3. Reliability

Revenue Flows through the U.S. Power Sector
(EPSA/ORNL Energy Finance Data Warehouse)

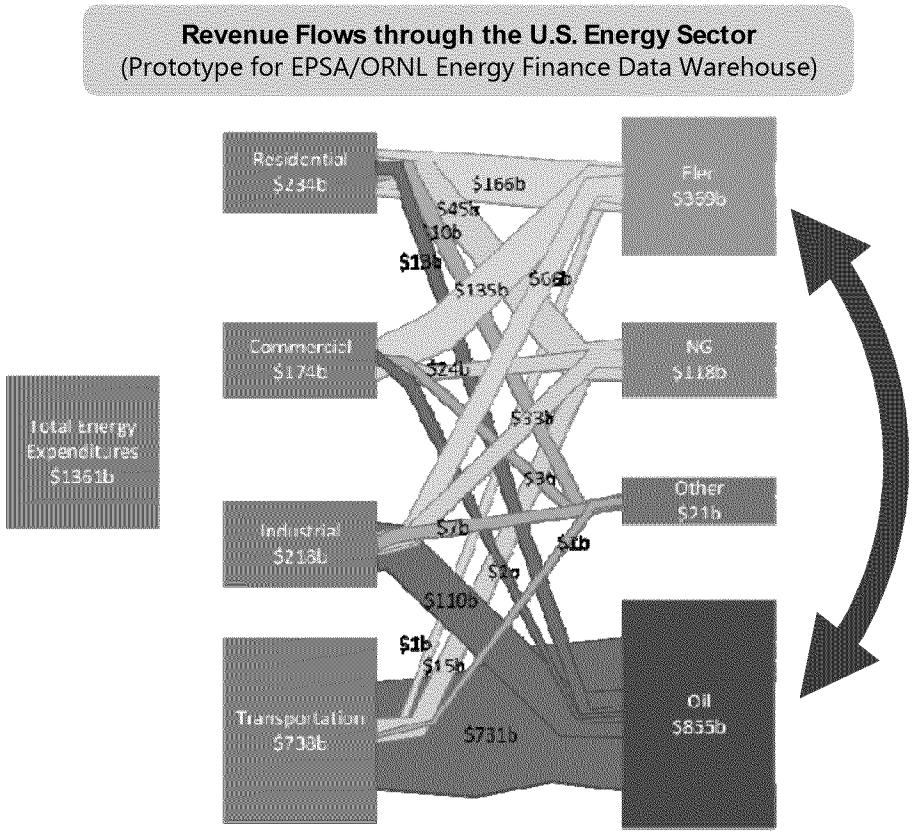


Zeng, Hendrickson, Lee, Chinthavali, Lin, Hsieh, Shankar. (2017). Energy finance data warehouse: Tracking revenues through the power sector. The Electricity Journal. 30. 4-9. 10.1016/j.tej.2017.03.001.

Financial Flows

Scenarios that involve growth of overall electricity demand

2b. High Electric Vehicle Adoption

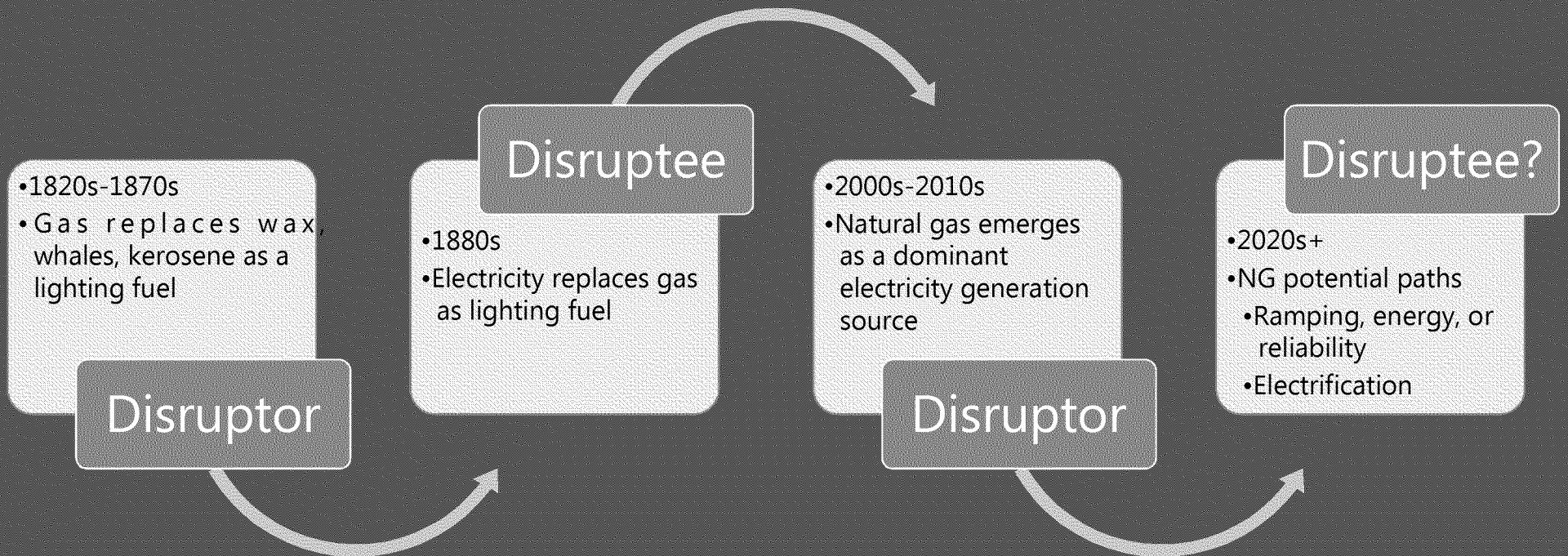


Zeng, Hendrickson, Lee, Chinthavali, Lin, Hsieh, Shankar. (2017). Energy finance data warehouse: Tracking revenues through the power sector. The Electricity Journal. 30. 4-9. 10.1016/j.tej.2017.03.001.

CLOSING

Is change accelerating?
Yes, according to the *Fuel Rate of Change* metric.

Is natural gas a disruptor or disruptee?
Yes.



Eric Hsieh

THANK YOU

Aligning Gas and Electric Markets: Analysis and Solutions

EPRI: 36TH ANNUAL SEMINAR ON FUELS, POWER MARKETS, AND RESOURCE PLANNING

November 8, 2017

N. Jonathan Peress




“There cannot be a smart, interactive grid unless the business rules governing the means by which gas is traded and dispatched are in sync with the evolving needs of the electric markets.”
-EDF FERC Comments, November 2014
“We continue to recognize that additional intraday nomination opportunities could promote more efficient use of existing pipeline infrastructure and provide additional operational flexibility to all pipeline shippers, including gas-fired generators.”
-Final FERC Order #809
April 2015

Two Crucial Energy Markets

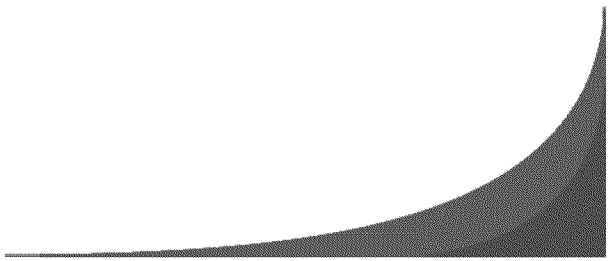
ISO-New England, the regional wholesale electricity market for Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont is increasingly reliant on natural gas.

- Roughly 50% of their electricity comes from gas-fired generators.

The wholesale electricity price is typically dictated by the fuel cost for gas-fired generators.

- Electricity generators buy gas mostly in a secondary market. Their fuel cost is determined by the spot price for natural gas.

Increased natural gas prices will be strongly amplified through the wholesale electricity markets.



Observations re: Basis Differential and Constraint Thresholds

Wyoming Trading Hubs - Mason et al. (April 2014)

Gas generally flows from west to east between these two hubs, so that one may interpret the source of supply as represented by the trading hub in the western part of the state (the Opal trading hub) and the source of demand as represented by the trading hub in the eastern part of the state (the Cheyenne trading hub).

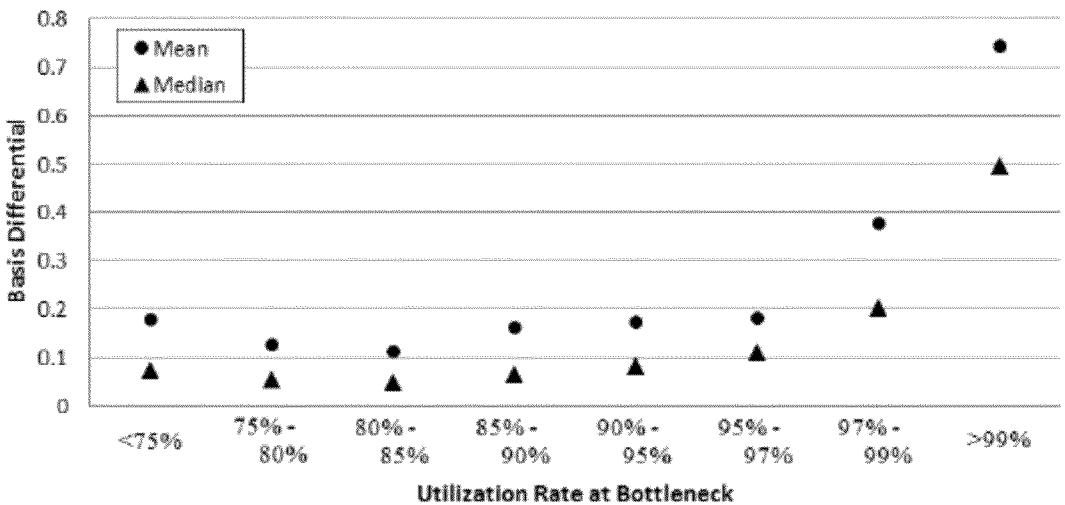


Figure 3: Basis Differential vs. Utlitzaton Rate

When the utilization rate does not exceed 97% we see that the mean basis differential is between $0.10 and $0.20, with the median basis differential roughly half the mean value. Once the utilization rate exceeds 97%, however, the basis differential starts to rise rapidly. For observations where the utilization rate falls between 97% and 99%, the mean basis differential is roughly $0.40 (with a median value of about $0.20). When the capacity constraint is very nearly binding, i.e., when the utilization rate exceeds 99%, the basis differential increases to nearly $0.80 on average (with a median value of $0.50). As a utilization rate in excess of 97% seems likely to signal the imminent potential for capacity constraints to bind, the data suggest binding capacity constraints can exert a powerful effect on spot prices.

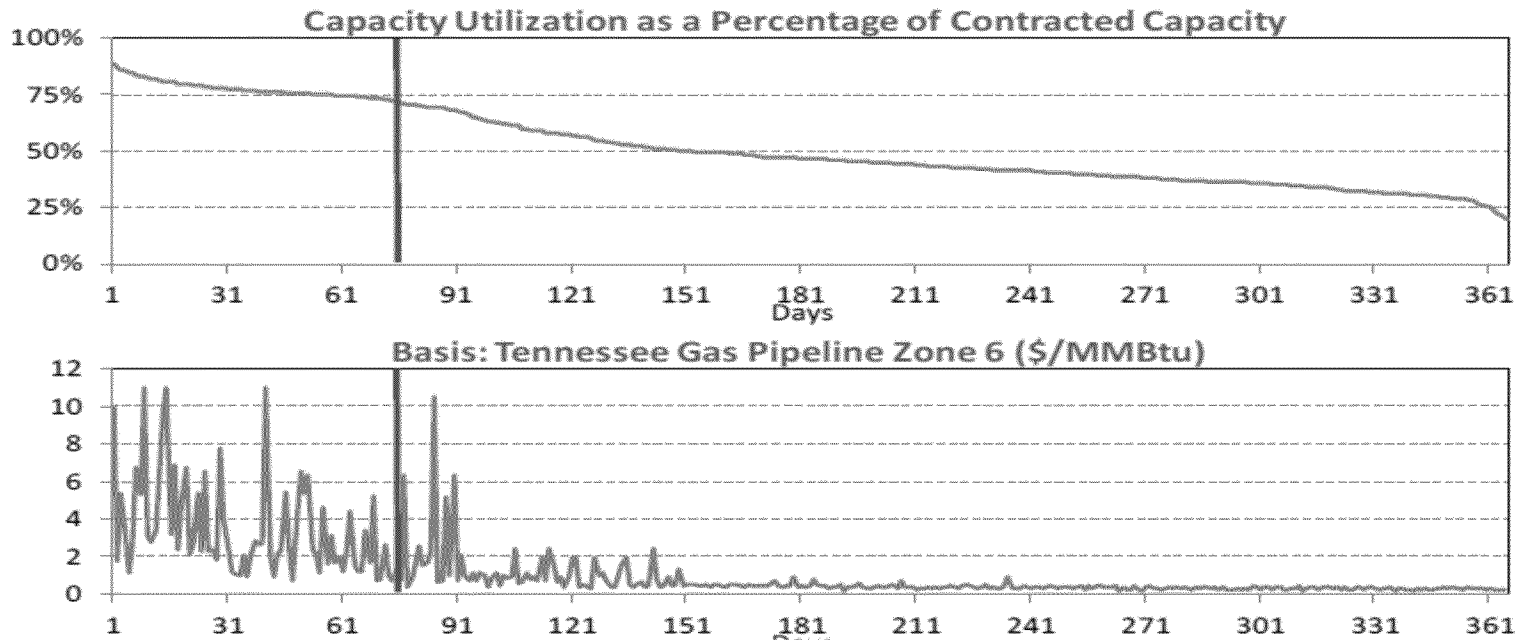
The implication is that capacity constraints (and the associated congestion) can be excessively costly to natural gas market participants. Figure 3 demonstrates the potential for a five-fold increase in the median basis differential if the utilization rate increases from 95% to 99%! As the capacity of the bottleneck

New England Trading Hubs

Black & Veatch for NESCOE-April 2013

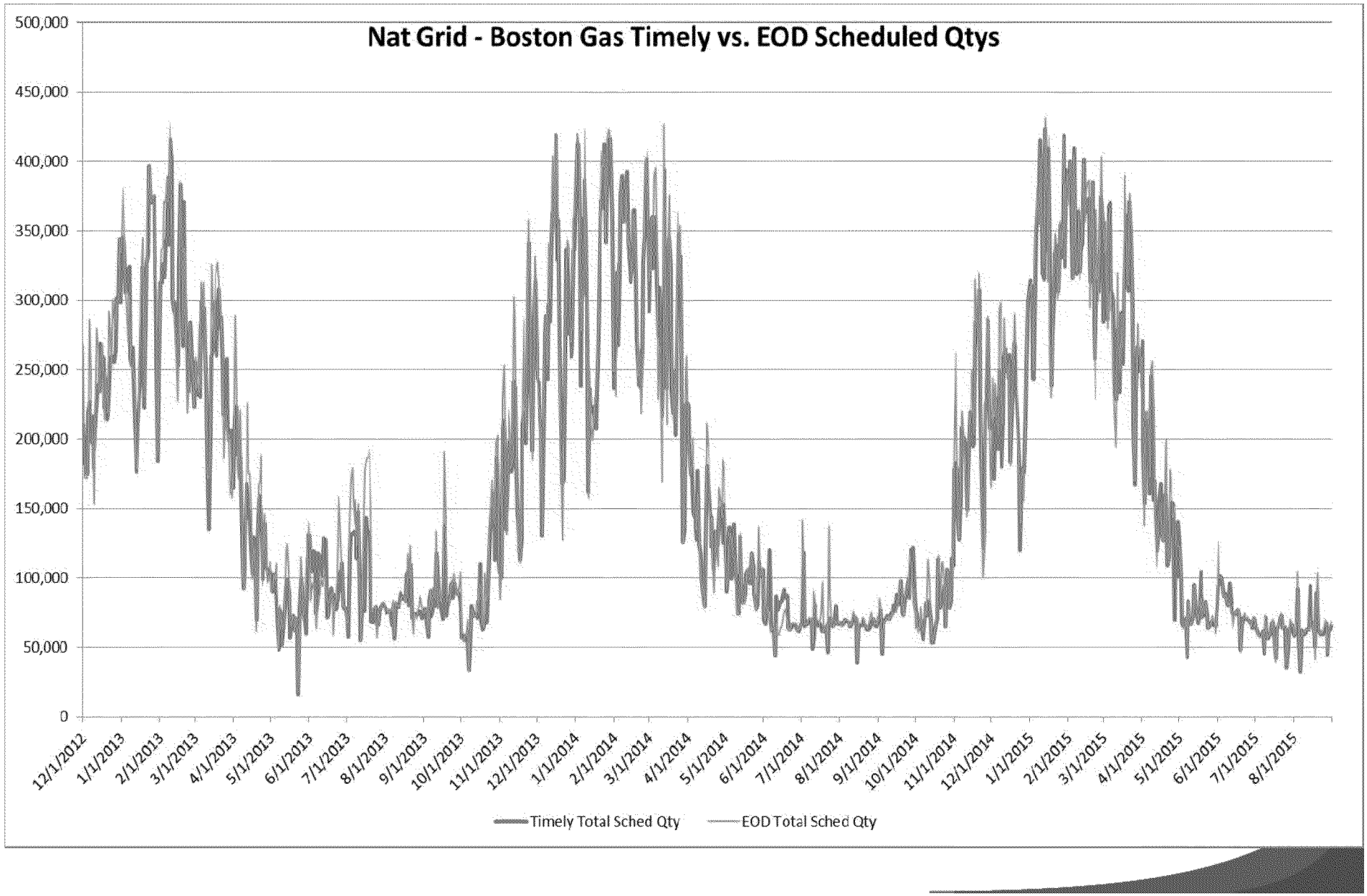
As shown in Figure 10, when total deliveries in East Massachusetts approach 75% of existing contract capacity serving the sub-region, regional gas price basis (measured at the Tennessee Gas Pipeline Zone 6 pricing point) spikes up. To reflect these dynamics that are characteristic of the New England market, Black & Veatch constructed an "Existing Constraint Capacity" threshold, which is 75% of existing contracted capacity. The red line in Figure 10, illustrates this "Existing Constraint Capacity" threshold, highlighting the relationship between gas pipeline capacity utilization and basis. Review of utilization factor and basis spikes for other sub-regions lead to similar observations.

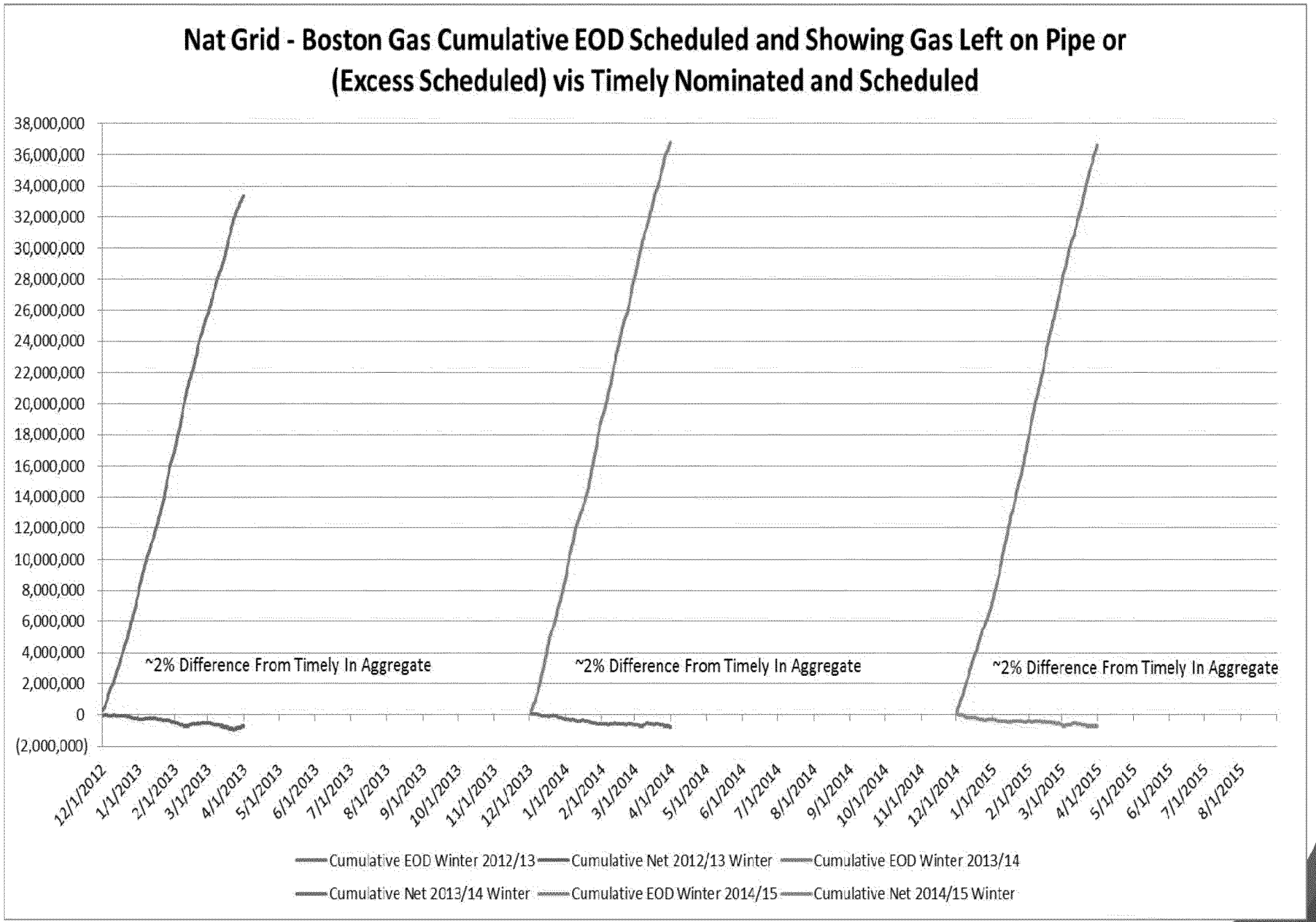
Figure 10: Capacity Utilization vs. Basis: Eastern Massachusetts, 2010-2011 Gas Year

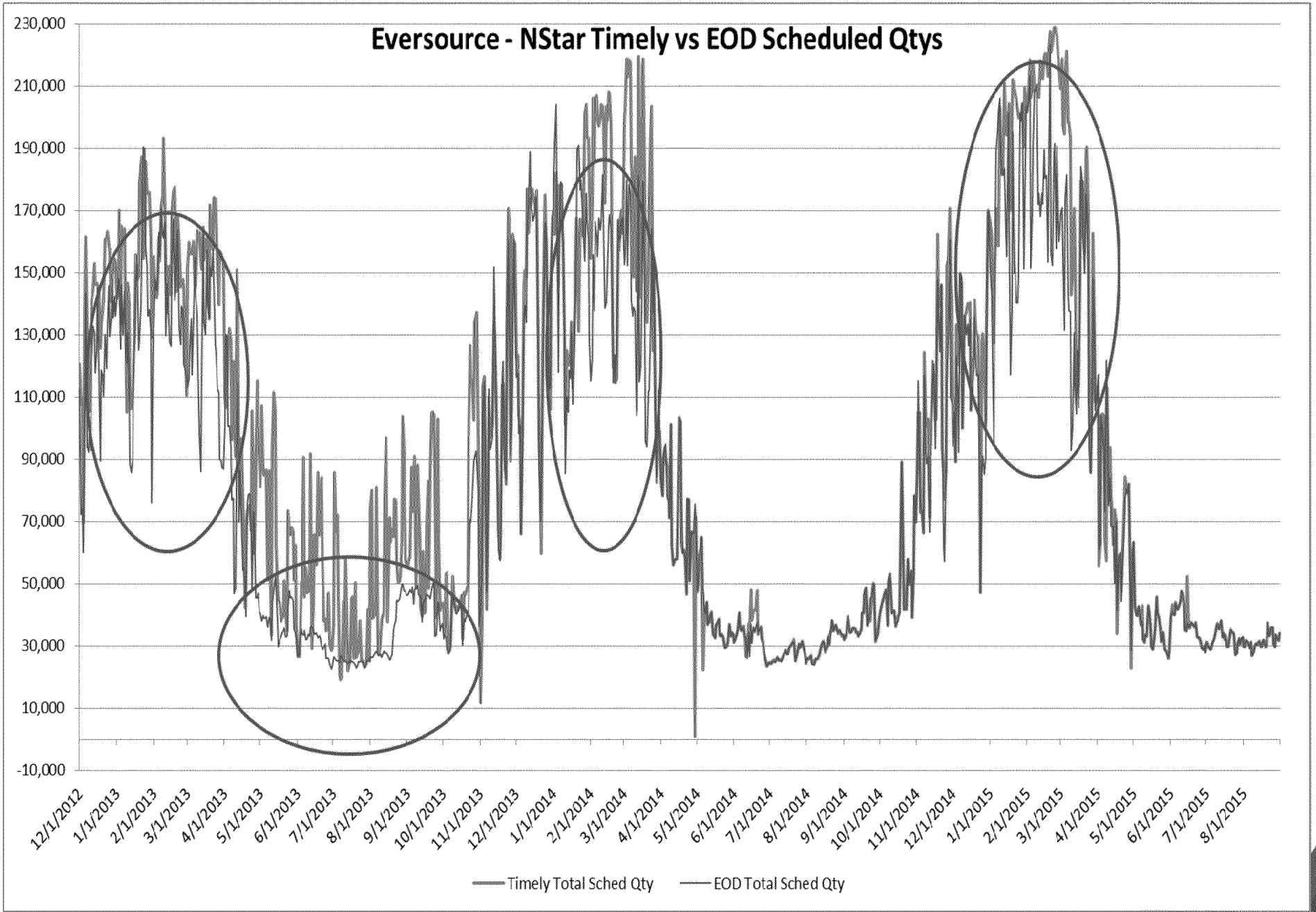


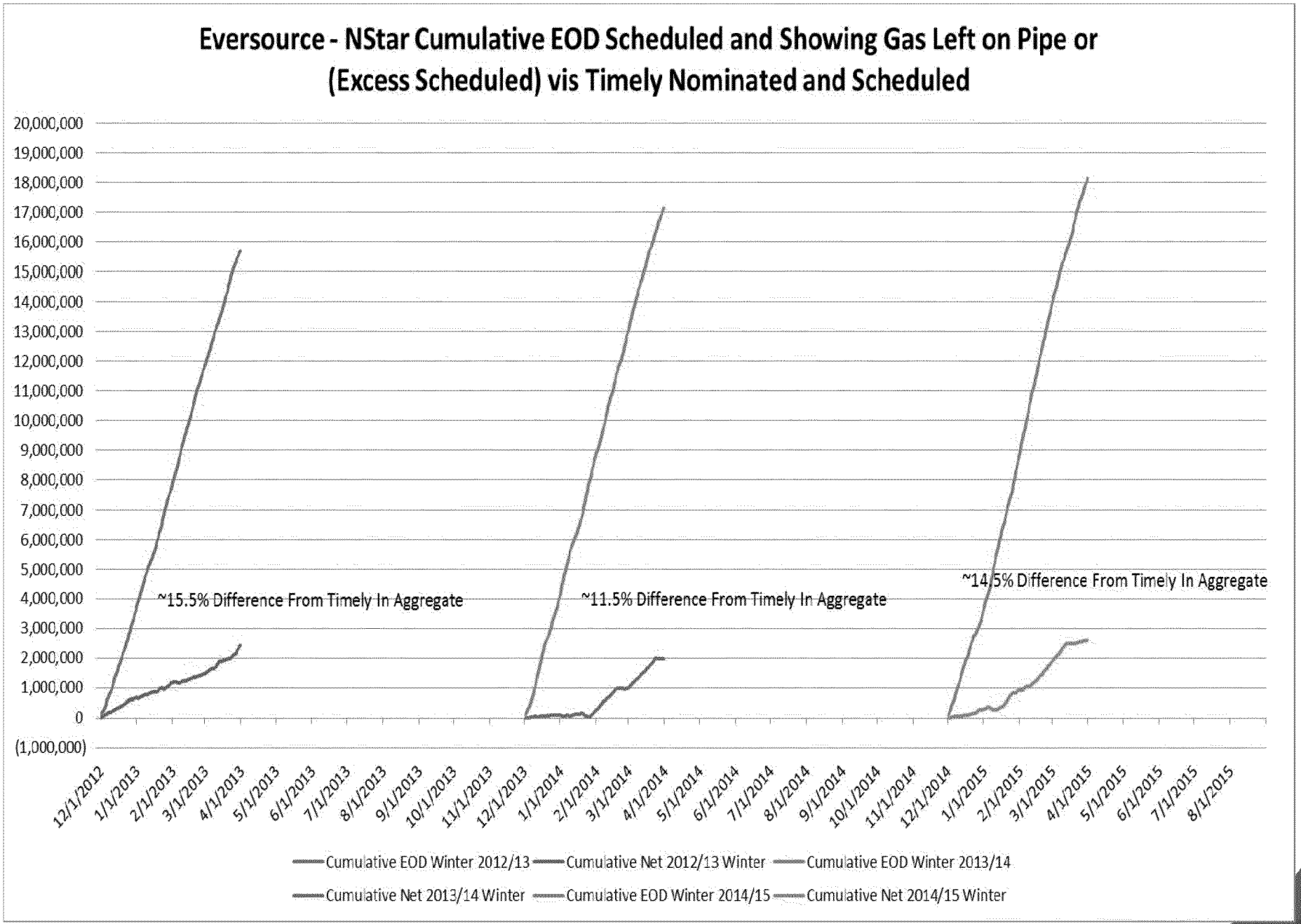
Skipping Stone New England Analysis

(undertaken to support regional policy discussions)

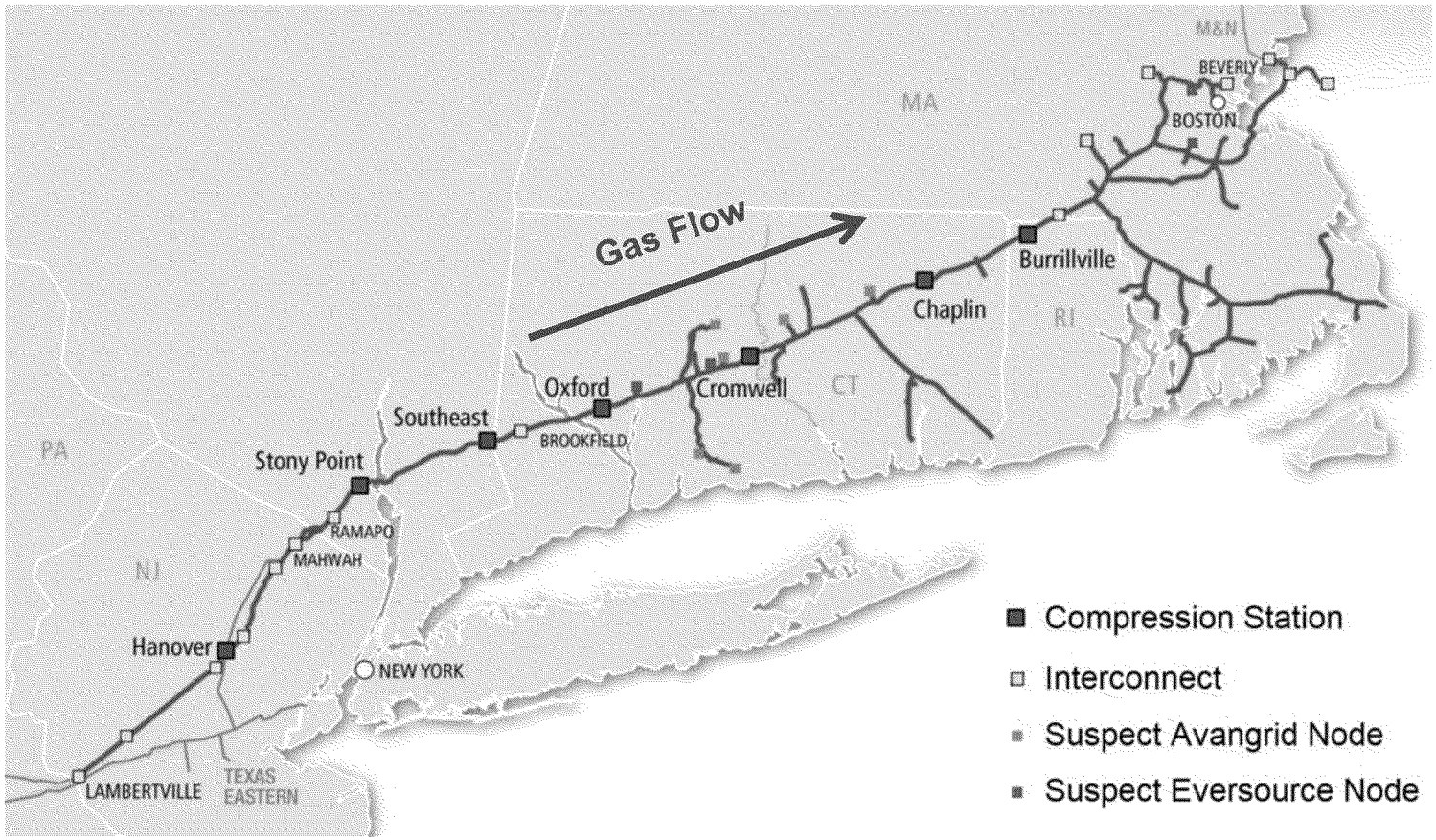



Nat Grid - Boston Gas Cumulative EOD Scheduled and Showing Gas Left on Pipe or (Excess Scheduled) vis Timely Nominated and Scheduled
38,000,000
36,000,000
34,000,000
32,000,000
30,000,000
28,000,000
26,000,000
24,000,000
22,000,000
20,000,000
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
(2,000,000)
~2% Difference From Timely In Aggregate
~2% Difference From Timely In Aggregate
~2% Difference From Timely In Aggregate
12/1/2012
1/1/2013
2/1/2013
3/1/2013
4/1/2013
5/1/2013
6/1/2013
7/1/2013
8/1/2013
9/1/2013
10/1/2013
11/1/2013
12/1/2013
1/1/2014
2/1/2014
3/1/2014
4/1/2014
5/1/2014
6/1/2014
7/1/2014
8/1/2014
9/1/2014
10/1/2014
11/1/2014
12/1/2014
1/1/2015
2/1/2015
3/1/2015
4/1/2015
5/1/2015
6/1/2015
7/1/2015
8/1/2015
Cumulative EOD Winter 2012/13
Cumulative Net 2012/13 Winter
Cumulative EOD Winter 2013/14
Cumulative Net 2013/14 Winter
Cumulative EOD Winter 2014/15
Cumulative Net 2014/15 Winter


Eversource - NStar Timely vs EOD Scheduled Qtys
230,000
210,000
190,000
170,000
150,000
130,000
110,000
90,000
70,000
50,000
30,000
10,000
-10,000
12/1/2012
1/1/2013
2/1/2013
3/1/2013
4/1/2013
5/1/2013
6/1/2013
7/1/2013
8/1/2013
9/1/2013
10/1/2013
11/1/2013
12/1/2013
1/1/2014
2/1/2014
3/1/2014
4/1/2014
5/1/2014
6/1/2014
7/1/2014
8/1/2014
9/1/2014
10/1/2014
11/1/2014
12/1/2014
1/1/2015
2/1/2015
3/1/2015
4/1/2015
5/1/2015
6/1/2015
7/1/2015
8/1/2015
Timely Total Sched Qty
EOD Total Sched Qty


Eversource - NStar Cumulative EOD Scheduled and Showing Gas Left on Pipe or (Excess Scheduled) vis Timely Nominated and Scheduled
20,000,000
19,000,000
18,000,000
17,000,000
16,000,000
15,000,000
14,000,000
13,000,000
12,000,000
11,000,000
10,000,000
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
(1,000,000)
~15.5% Difference From Timely In Aggregate
~11.5% Difference From Timely In Aggregate
~14.5% Difference From Timely In Aggregate
12/1/2012
1/1/2013
2/1/2013
3/1/2013
4/1/2013
5/1/2013
6/1/2013
7/1/2013
8/1/2013
9/1/2013
10/1/2013
11/1/2013
12/1/2013
1/1/2014
2/1/2014
3/1/2014
4/1/2014
5/1/2014
6/1/2014
7/1/2014
8/1/2014
9/1/2014
10/1/2014
11/1/2014
12/1/2014
1/1/2015
2/1/2015
3/1/2015
4/1/2015
5/1/2015
6/1/2015
7/1/2015
8/1/2015
Cumulative EOD Winter 2012/13
Cumulative Net 2012/13 Winter
Cumulative EOD Winter 2013/14
Cumulative Net 2013/14 Winter
Cumulative EOD Winter 2014/15
Cumulative Net 2014/15 Winter

Algonquin Pipeline



Distinctive Patterns

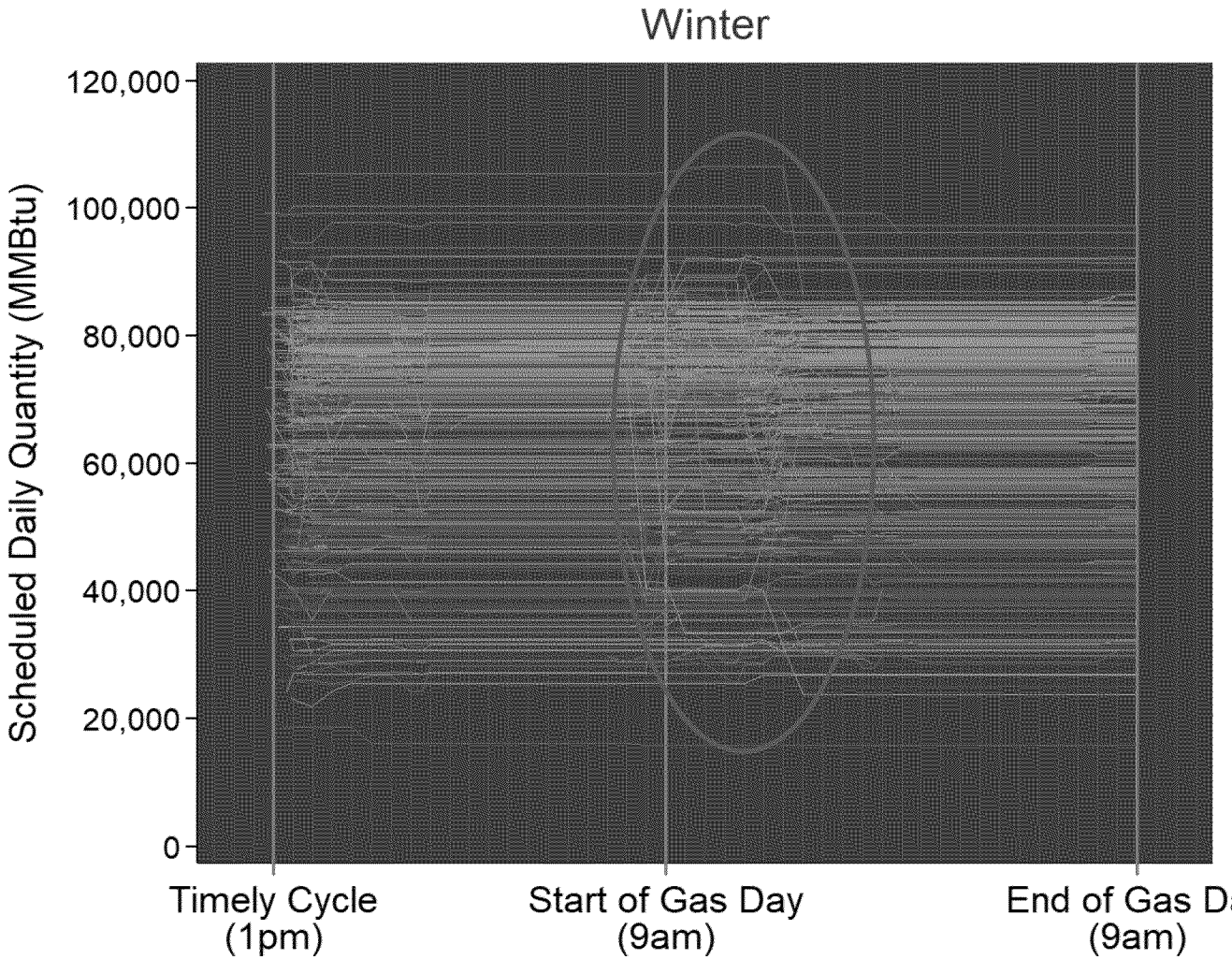
Study examined 8 million data points – three years of scheduling data from the Algonquin pipeline (August 1, 2013 through July 31, 2016).

Discovered that local gas utilities owned by two companies – Eversource and Avangrid – routinely scheduled large deliveries ahead of time, then sharply reduced those orders at the last minute.

- Other utilities consistently made slight adjustments both up and down, throughout the day, averaging +/- 5 to 15% in either direction.
- Eversource and Avangrid regularly made large *downward* adjustments averaging 10 to 50% in *final hours* of the trading day.

This "down-scheduling" consistently came too late for pipeline companies to make that capacity available to anyone else, effectively limiting available gas supply in the wholesale market.

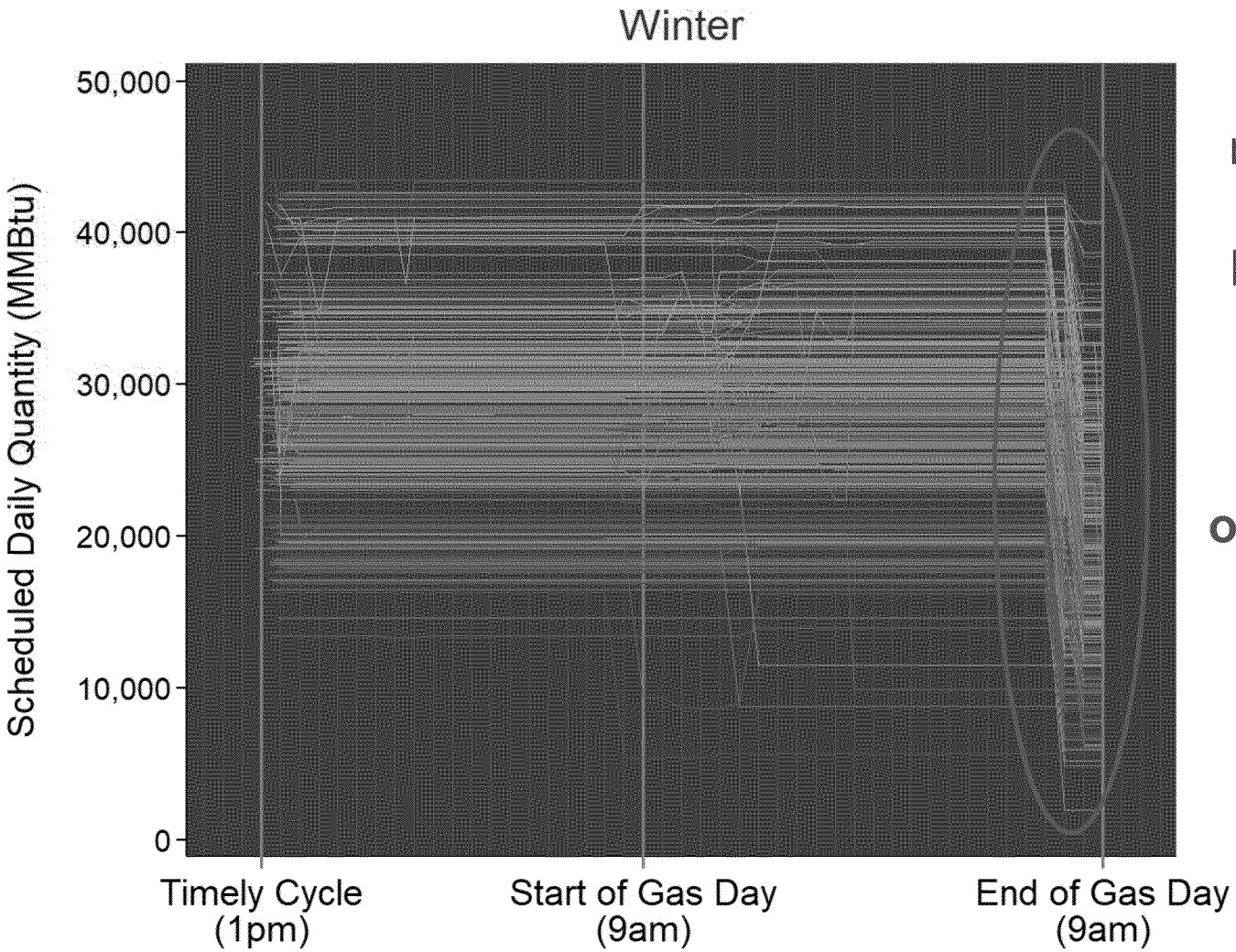
Typical Scheduling Pattern



Each line represents one scheduling period and gas day.

Changes are typically made close to the START of the gas day.

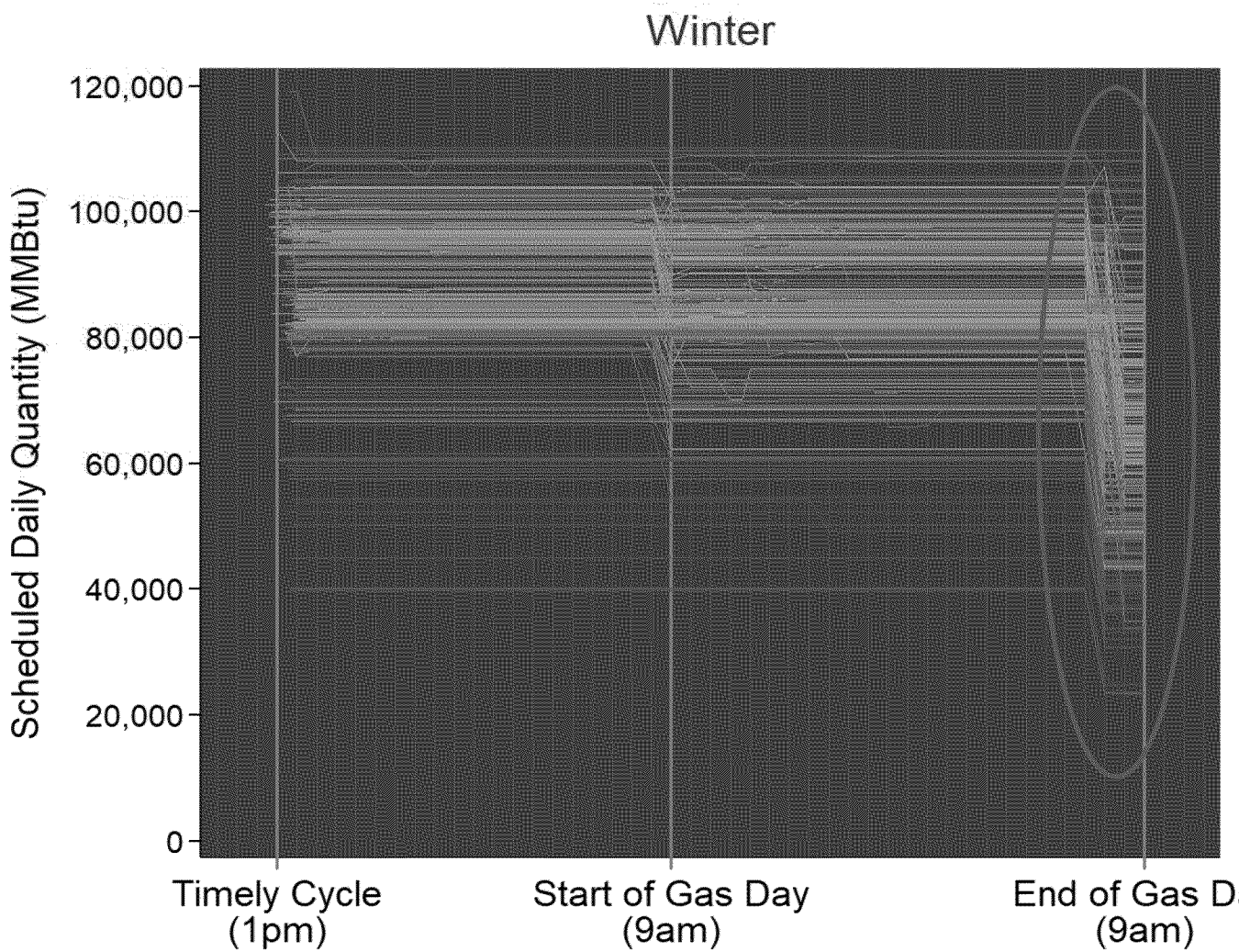
Eversource Scheduling Pattern



Each line represents one scheduling period and gas day.

Big changes consistently occur near END of gas day.

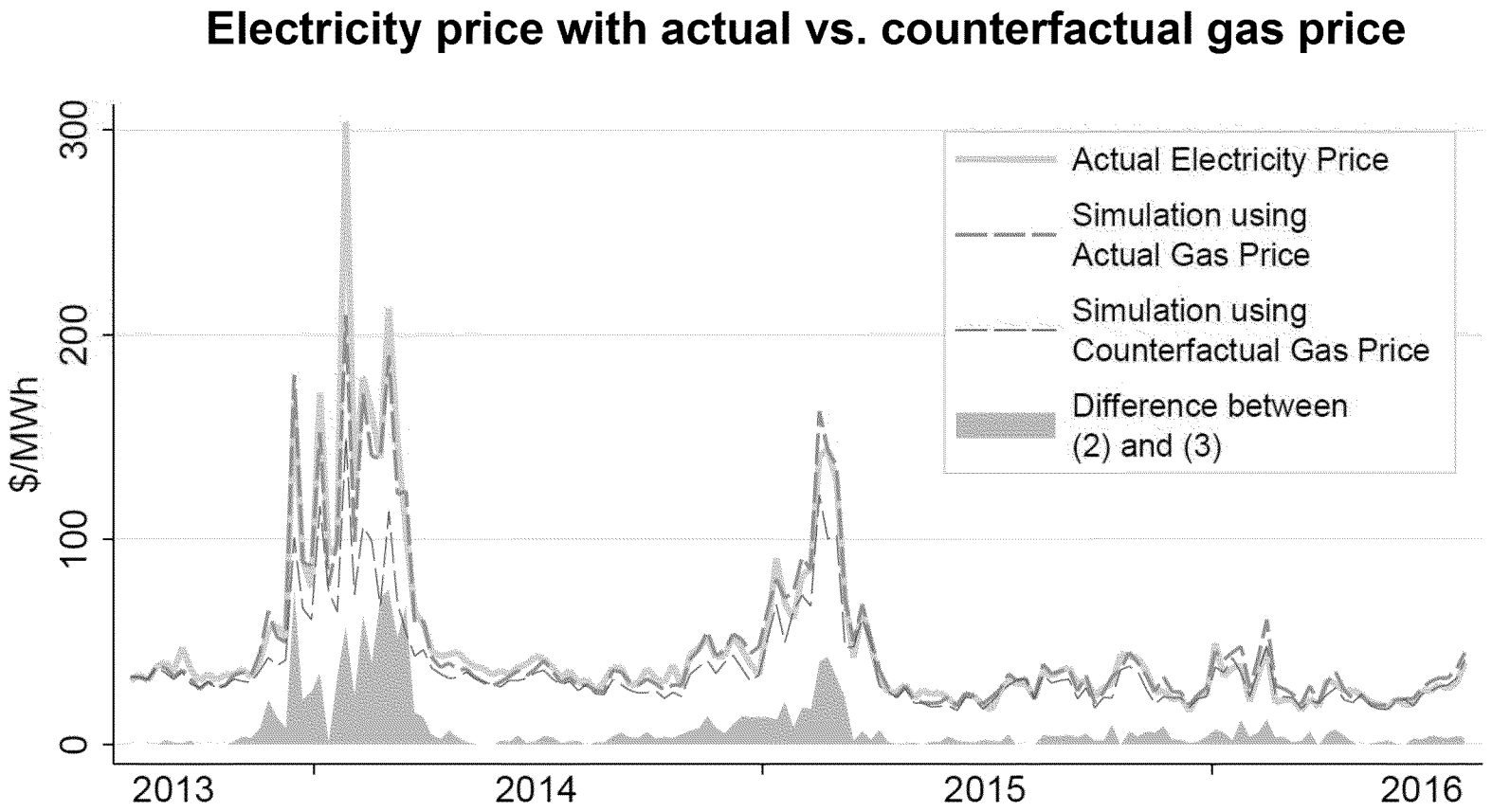
Avangrid Scheduling Pattern



Each line represents one scheduling period and gas day.

Big changes consistently occur near END of gas day.

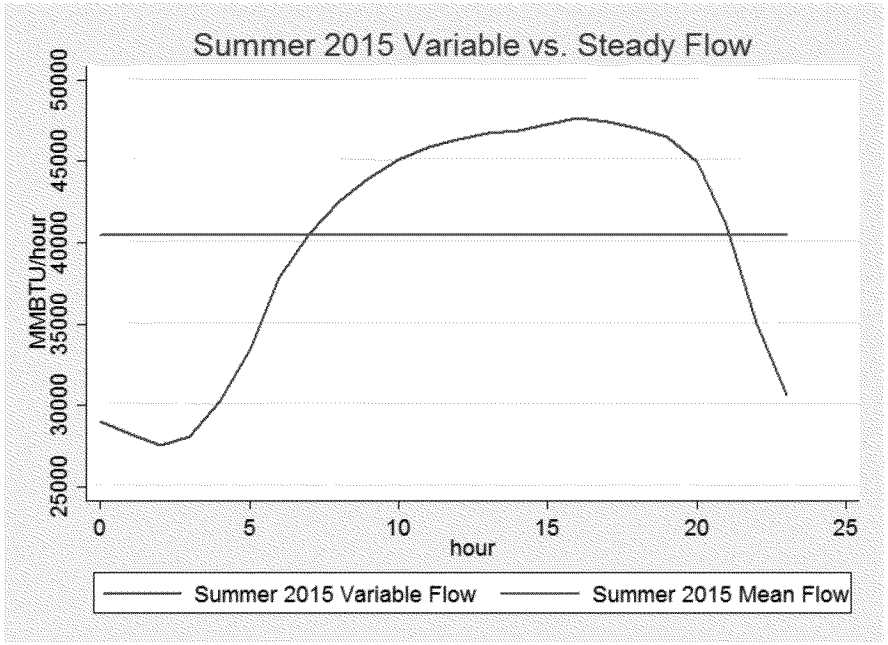
Extreme Amplification



Conclusion from Paper

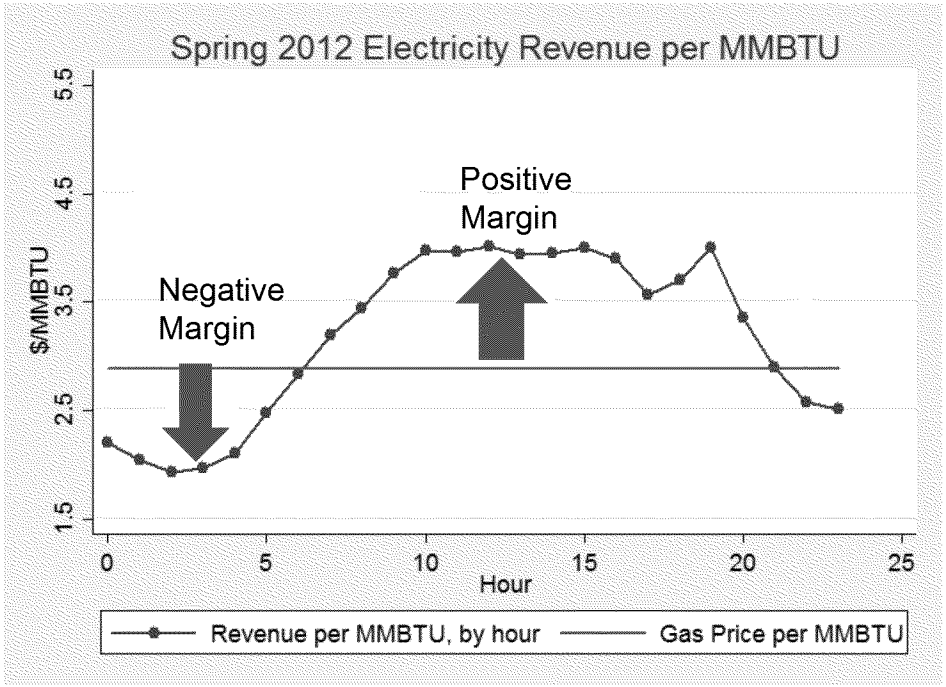
Pipeline market reforms that facilitate more flexible contracting mechanisms, more frequent scheduling cycles, and act to prevent capacity withholding, or impose a cost for capacity withholding and create a publicly-available record of capacity withholding; all of which will serve to better align the gas transport and electricity markets, could help to create more liquid markets in which firms find it more difficult to exert market power.

Market rules need to be updated to enhance gas/electric coordination, reliability and grid transformation.



The gas market design generally assumes uniform hourly (i.e., ratable) flow for the average day (flat red line above). Flow used by generators is far more shaped over the course of the day (blue shaped line) to match electrical output with load.

Natural gas and electric markets do not price and value fuel supply for flexibility attributes, yet flexibility is the paradigm of the evolving electric grid.



The value of and cost for generators to obtain gas over the course of the day varies, yet generators face structural challenges and are sometimes impeded in accurately reflecting that variation in the organized markets.

Particularly in Organized Electric Markets, natural gas services do not reflect the variation in services and pricing seen in the wholesale electric markets. This expresses itself in pipeline requirements for ratable flow even when it would be possible for shippers to vary receipts and deliveries such that they are in balance hourly, but are nonetheless non-ratable. Even in vertically integrated markets, the ratable flow requirement frustrates sub-day scheduling of gas to meet sub-day demand for gas-fired electric generation.

For the most part, there is no partial-day non-ratable take "market" for gas; therefore there are no price signals to inform exactly what combination of natural gas facilities and services are required to meet the variable demands of natural gas-fired generation – demands that will only increase as the electric grid integrates more renewables and relies more heavily on natural gas generation to meet electricity demand.

NAESB Process -

NAESB WGQ Proposed Definition 1.2.[z1]

A Shaped Nomination is a nomination in which a Service Requester provides both a daily quantity and a quantity for each hour of the Gas Day, with each hour beginning at the start of the hour (e.g. 10:00 AM).

NAESB WGQ Proposed Standard 1.3.[z1]

Where a Transportation Service Provider offers a service under its tariff, general terms and conditions, and/or contract provisions which expressly provides for a Service Requester (SR) to submit a Shaped Nomination, the SR should submit its nomination for that service as a Shaped Nomination using NAESB WGQ Standard No. 1.4.1 (Nomination). Receipt of service expressly providing for the use of a Shaped Nomination may require additional coordination with interconnected parties.

A SR utilizing other services that do not expressly provide for the use of a Shaped Nomination should not be required to submit a Shaped Nomination nor does this standard prescribe any affect for services that do not expressly provide for Shaped Nominations.

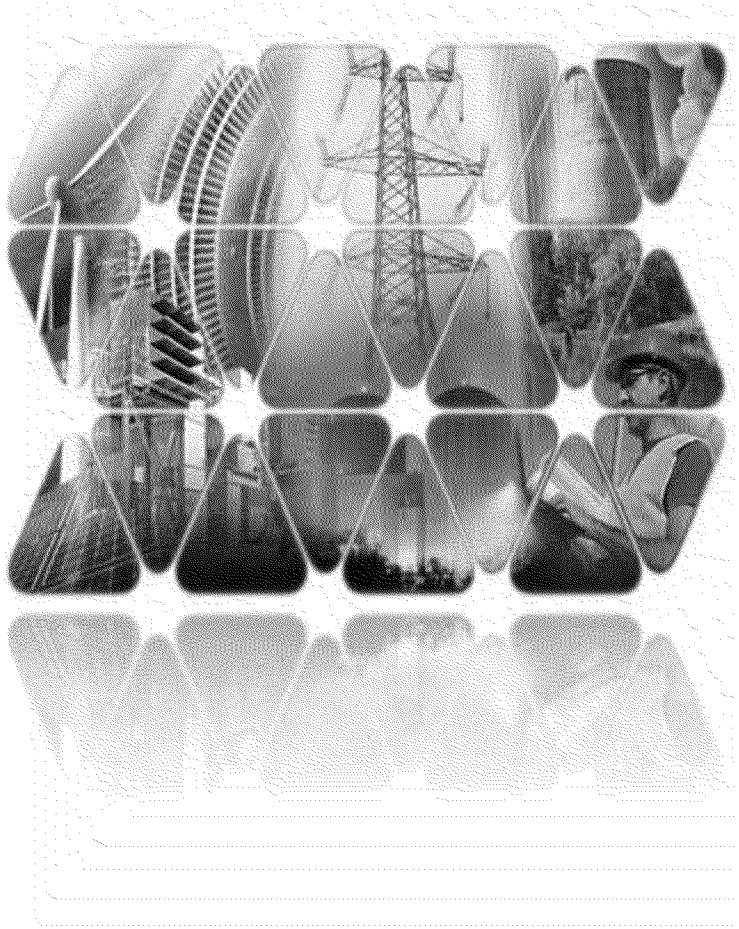

“Gas and electric wholesale markets should be economically and operationally coordinated so that products and services in each market generate effective and actionable price signals in and across these two markets, and so that appropriate, right sized, investments are called forth in a timely manner. Market rules, wherever possible, should be aimed at establishing self-correcting market structures that will further serve to support the generation of appropriate price signals that will incentivize market players to meet established policy goals..”
-EDF FERC Comments,
October 2014

Conclusions

- Generators are not able to efficiently buy variable sub-day services and are somewhat restricted to what they can bid based on daily index pricing for natural gas supply.
- Shaped flows would allow generators to schedule varying flow quantities of gas for delivery the next day that correlate to their anticipated output levels.
- With updated scheduling and pricing regimes, sub-day flexibility on the gas side can be efficiently priced (enhancing allocative efficiency) providing benefit to pipelines, generators, flexibility service providers and consumer savings.
- Price formation increases innovation, product definition and spurs investment.
- In New England, standards and fostering transactions for services generators need and are willing to contract with pipelines is key to resolving the commercial stalemate and maintains allocative efficiency; a superior and market-based solution to RTO-controlled rate-based capacity (allowed only by Commission waiver).

EPRI | ELECTRIC POWER RESEARCH INSTITUTE

How Do We Plan for an Integrated Energy Network?



Adam Diamant
Technical Executive
Energy & Environmental Analysis

Tom Wilson
Principal Technical Executive
Energy & Environmental Analysis

36th Seminar on Fuels, Power Markets & Resource Planning
November 8-9, 2017

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Purpose of the Session

Key Takeaways from Presentation

- The Integrated Energy Network (IEN) requires re-thinking planning.
- EPRI plans to publish a white paper later this year that highlights the 10 key IEN-planning (IEN-P) planning challenges
- EPRI, members, and others are actively seeking advances
- EPRI is aligning key R&D activities to address challenges

Goals for this Presentation

- Inform seminar participants about new planning challenges
- Describe EPRI activities to address IEN-P challenges
- Obtain your feedback and suggestions

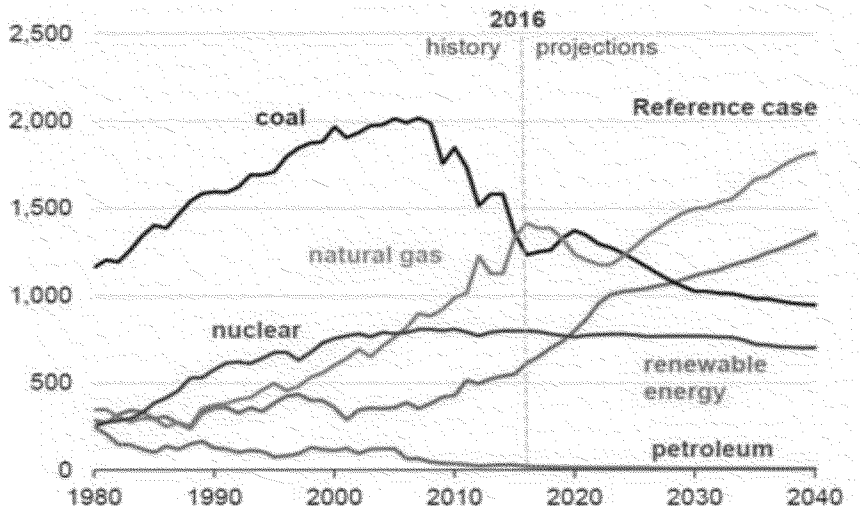
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Part 1
EPRI Integrated Energy Network and Resource Planning

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The Electric Sector Continues to Transform Rapidly

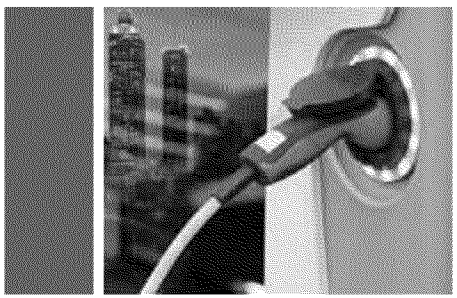
- Rapidly changing the resource mix
- Changing system characteristics and interaction of system resources.
- Drivers of change
  - Technology cost and performance
  - Deployment of utility-scale VER
  - Low natural gas fuel prices
  - New environmental regulations
  - Integrated grid and DER deployment
  - Changing (net) load shapes
  - Changing customer behavior



U.S. Net Electricity Generation from Select Fuels (billion kilowatt hours).
Source: U.S. Energy Information Agency, Annual Energy Outlook 2017.

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The Energy Future — Selected "Global Points of View"



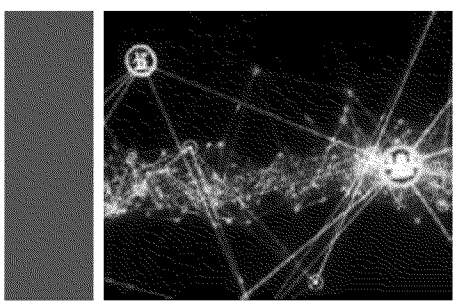
Using Cleaner Energy

- Efficiency emerges across the energy sector
- Electricity demand outpaces energy demand
- Efficient electrification is an opportunity toward a cleaner future
- Transportation becomes more efficient and cleaner



Producing Cleaner Energy

- Energy reduces its environmental footprint
- Central-station generation serves an anchor role
- Renewable energy deploys rapidly



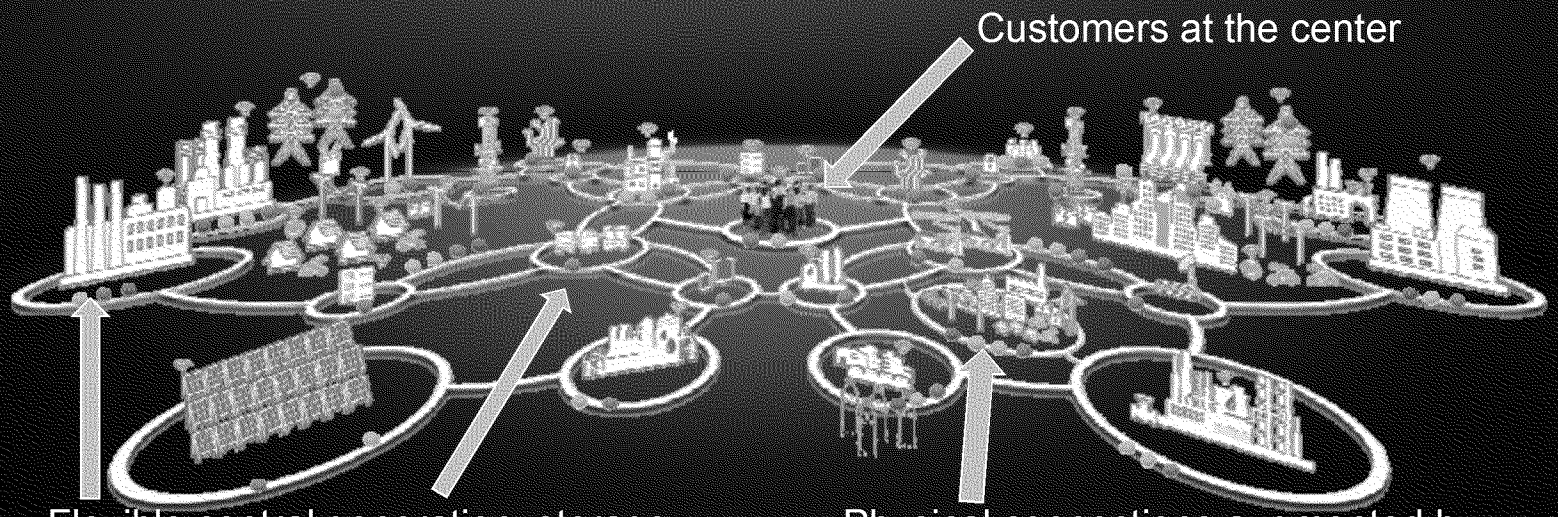
Integrating Energy Resources

- Connections across energy sources important
- Integrated electric grid is key enabler
- Higher expectations for power quality/reliability
- Security/resiliency challenges and opportunities

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17cv01906 Sierra Club v. EPA

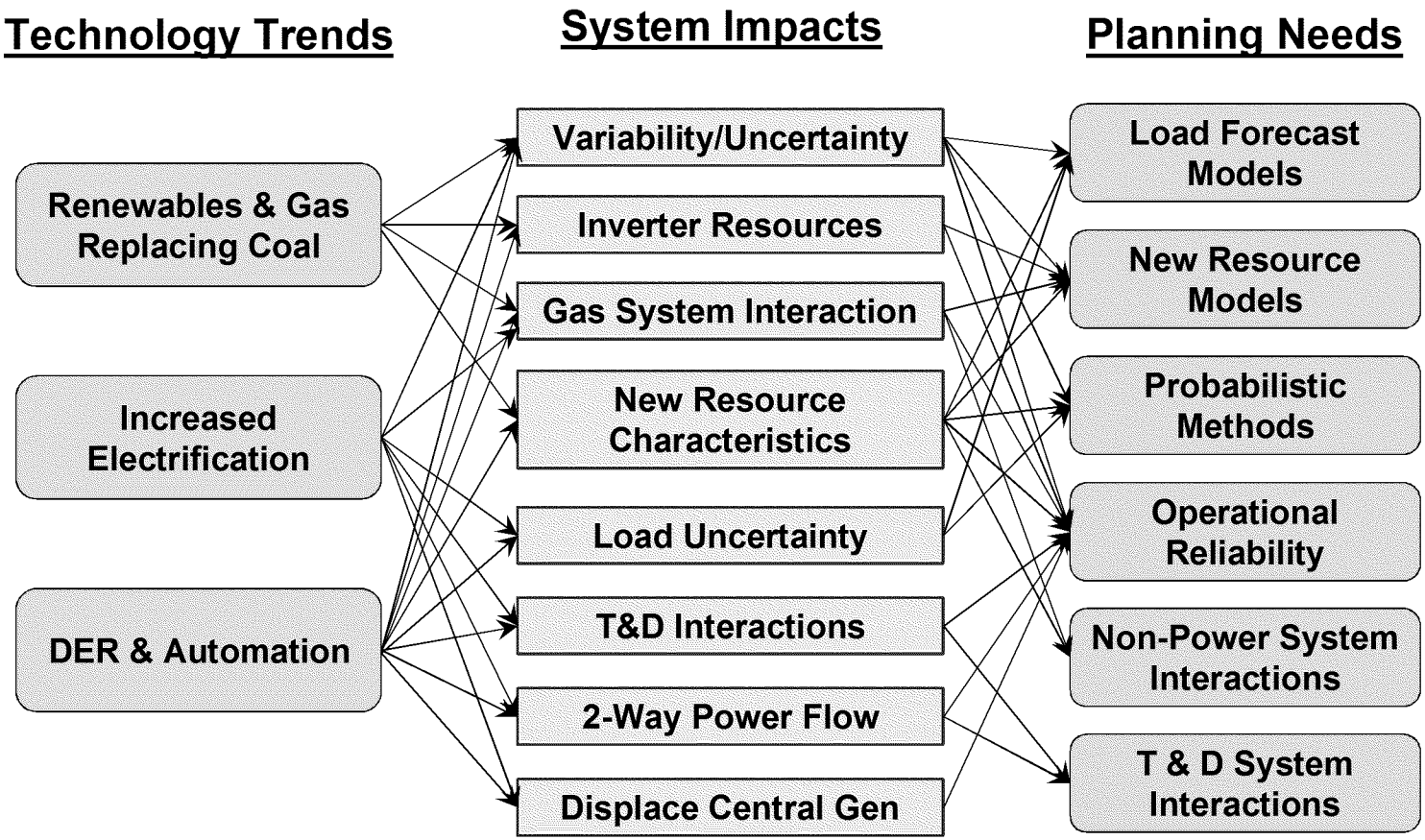
Integrated Energy Network



Energy and Natural Resource Systems are Integrated to Provide Reliable, Safe, Affordable, Cleaner Energy and Expanded Customer Choice

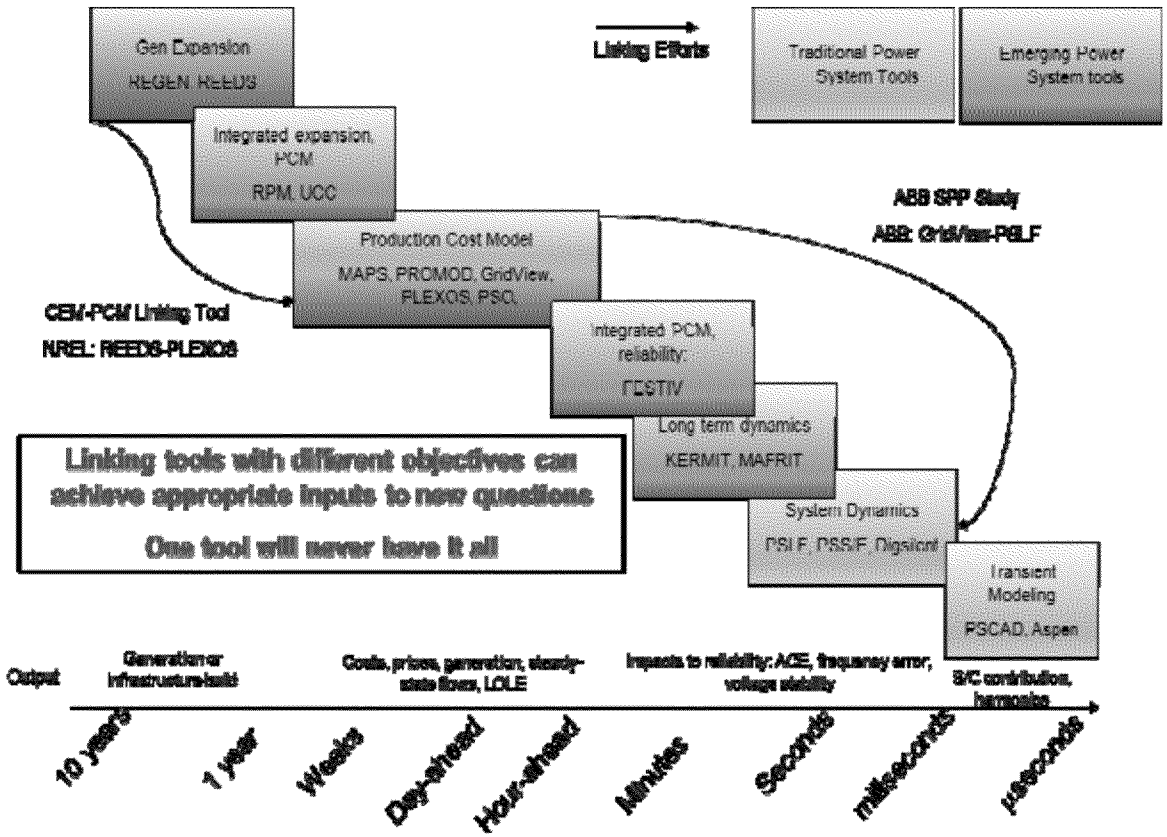
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Emerging System Characteristics & Planning Impacts



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New Planning Paradigm Needed



- Interaction between Generation and T&D planning tools
  - Spatial/temporal granularity
  - T&D infrastructure costs?
  - Operational issues included?
- Interdependent systems
  - Gas, transport, water, etc…
- EPRI TI project to link different modeling domains

EPRI's Integrated Energy Network Planning (IEN-P) white paper (Q4 2017) will be first step toward developing a new power system planning paradigm

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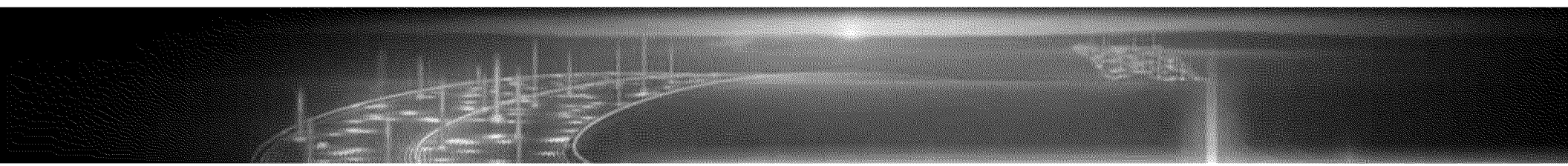
Why Call It Integrated Energy Network Planning?

- **Integrated**
  - Includes supply resources and demand-side options like traditional IRP
  - Integrates electric generation, transmission and distribution (G,T&D) planning
  - Electricity and other key resources & infrastructure (e.g., natural gas, water, transport)
- **Energy**
  - Focused primarily on the electric sector, but also….
  - Includes related energy resources (e.g., natural gas)
- **Network**
  - Applies to the entire electric grid, including transmission and distribution
  - Applies more broadly to the energy network and associated infrastructure
- **Planning**
  - Focus on the planning time horizon (5-20+ years)
  - Provide a framework to plan strategic company and ratepayer investments

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Key Insights from EPRI's IEN-P Initiative

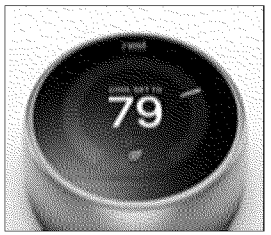
- The electric sector is transforming rapidly
- A new integrated power system planning paradigm is needed
- EPRI has identified 10 key resource planning challenges
- Integrated Energy Network Planning (IEN-P) includes electricity and other critical resources & infrastructure
- EPRI R&D is beginning to address these challenges

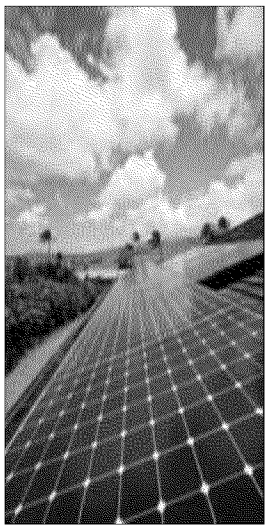


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Goals of EPRI's IEN-P White Paper

- Identify and describe key resource planning challenges
- Communicate the magnitude of these challenges
- Identify planning capabilities and processes that must evolve
- Identify research gaps





White paper critical to galvanizing the industry's thinking and bringing all stakeholders together

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Part 2
Integrated Energy Network Resource Planning Challenges

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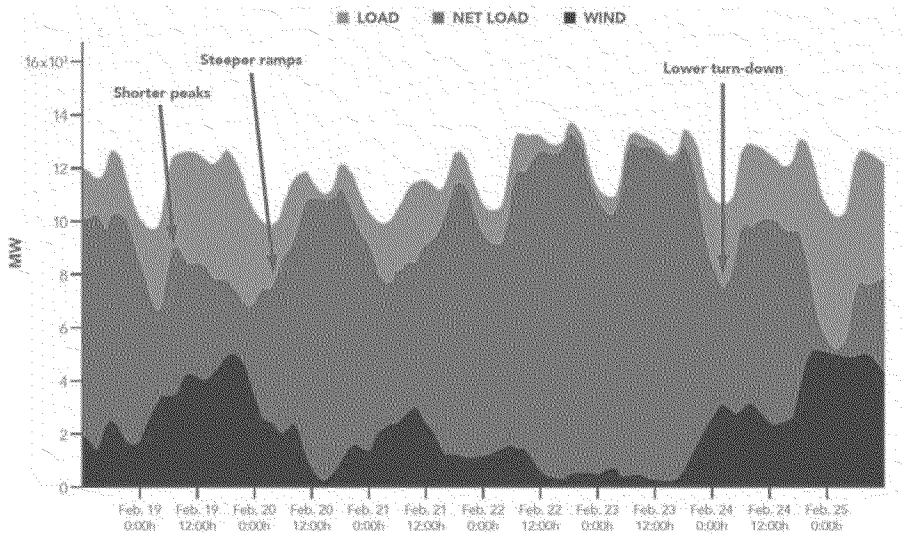
IEN Resource Planning Challenges

Category	Key IEN Planning Challenge
Modeling the Changing Resource Mix	1. Incorporating operational detail 2. Increasing modeling granularity 3. Integrating generation, transmission, & distribution planning 4. Expanding analysis boundaries and interfaces
Ensuring Adequate System Attributes	5. Incorporating new planning objectives and constraints 6. Integrating wholesale power markets
New Inputs for Resource Planning	7. Improving forecasting 8. Addressing uncertainty and managing risk 9. Improving modeling of customer behavior and interaction 10. Supporting expanded stakeholder engagement

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1. Incorporating Operational Detail

- Evaluate and address potential reliability impacts (e.g., frequency response, voltage stability and short circuit considerations) associated with the changing resource mix.



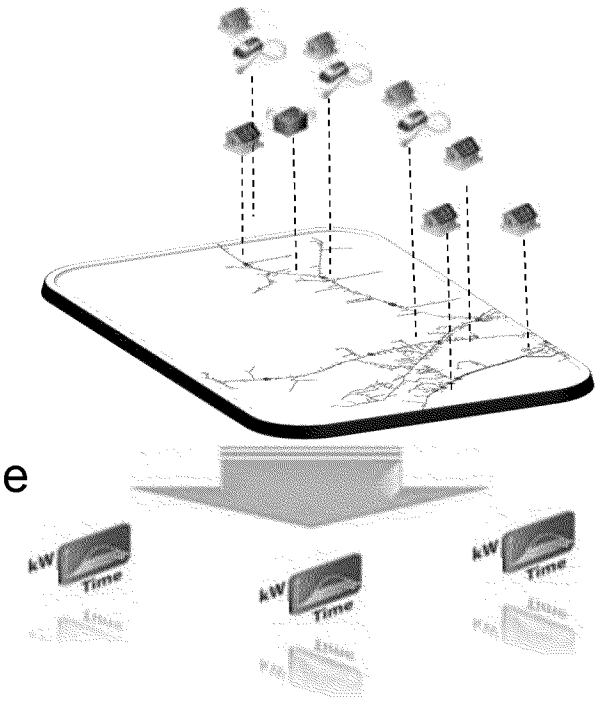
Wind and Solar Generation Can Increase Power System Flexibility Needs.
Source: Flexibility in 21st Century Power Systems, 21st Century Power Partnership.

- It is becoming more important to incorporate operational reliability capabilities (e.g., ramping rates, minimum generation levels), and adverse interactions (e.g., variability, uncertainty, active and reactive control capabilities) into resource planning.
- Existing resource adequacy metrics (e.g., LOLE) may not be the “best” or only metric to use to measure electric reliability.

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2. Increasing Modeling Granularity

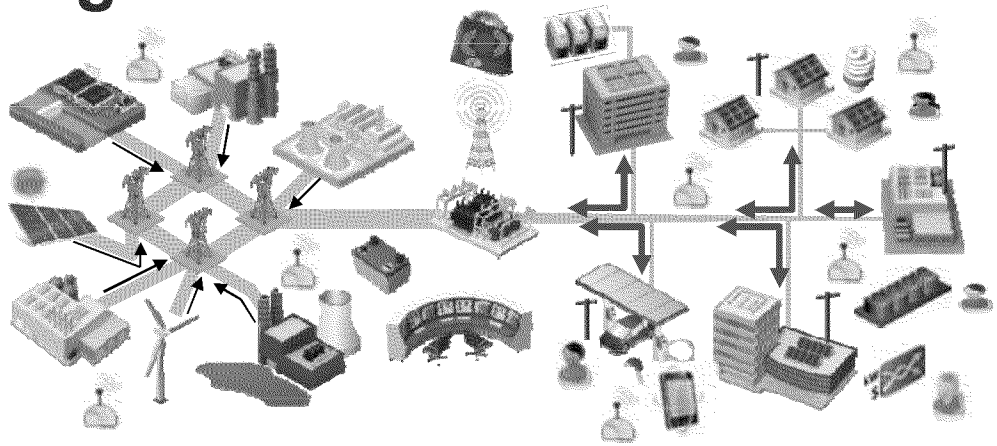
- *Temporal* Resolution
  - Hourly / sub-hourly time steps and multiple timeframes
  - Evaluation of energy storage systems and variable renewable resources require inter-temporal constraints and opportunities to be more fully recognized.
  - Understand potential net load impacts from utility renewable generation, customer choice, storage, DER deployment, and increased electrification.



- *Geographic* Resolution
  - "Birds of a feather flock together" – EVs and rooftop PV typically are adopted in neighborhoods, so disproportionally impact circuits. Traditional deterministic and stochastic modeling do not capture the geographic nature of customer preferences.
  - DER targeting and location have a direct impact on transmission and generation investment decisions and depend on customer preferences.

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3. Integrating G, T, and D Planning



- TSO/DSO interaction increasingly is important, particularly as the distribution system provides more services
- Evaluate “non-wires alternatives” that may provide higher value than transmission or generation development
- DER valuation and targeting, including locational attributes
- Improve communications and “hand shakes” between planning functions
- Connections to other critical infrastructure (e.g., natural gas, H_2O, EVs)

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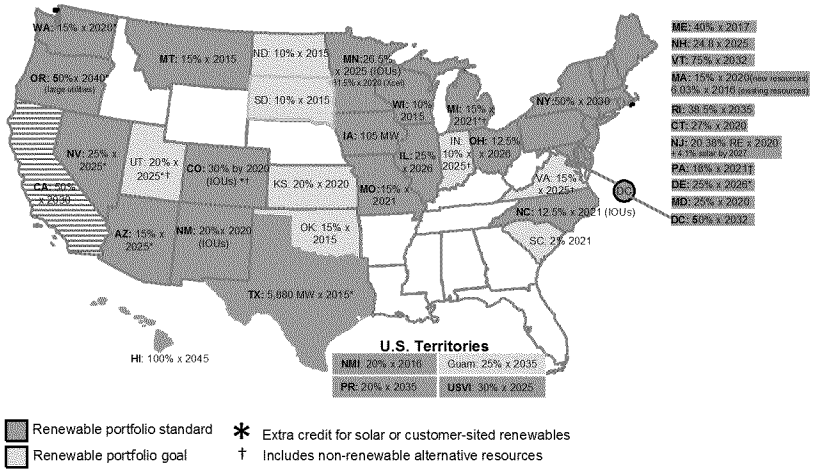
4. Expanding Analysis Boundaries

- Interactions with other sectors of the economy to achieve least-cost GHG emissions reductions (e.g., CA SB-350)
- "Gas-electric" coordination to better optimize planning and operations of natural gas fuels with electric operations
- Energy-water nexus – Planning to address both consumption and use of water in power generation and potential impacts of power generation on water resources is becoming more prominent.
- Multi-jurisdictional planning – Some companies are now facing conducting resource planning across multiple jurisdictions in an integrated manner. Examples include PacifiCorp in the western US and Duke in the eastern U.S.

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5. New Planning Objectives and Constraints

- GHG emissions and RPS – CA requires IRPs to achieve least-cost GHG emissions reductions and aggressive RPS targets.
- Water resources – Some electric companies are being asked to consider impacts on local water resources.



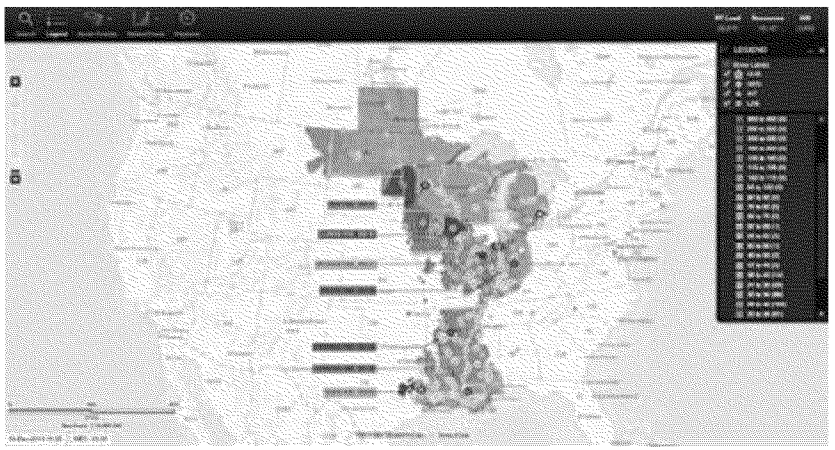
29 States + Washington DC + 3 territories have a Renewable Porfolio Standard
Source: www.dsireusa.org / February 2017

- Resiliency – Electric companies are being asked to more fully address system resiliency in resource planning. This includes two facets:
  - *Physical* – Protect the system from extreme weather events and restore it
  - *Cyber* – Protect the electric system from cybersecurity threats and restore it

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6. Wholesale Power Market Interactions

- Interactions between companies and ISO/RTOs markets are starting to create new challenges for resource planners.
- Planners are challenged by considering buying and selling energy, capacity, and ancillary services (A/S) rather than building new resources or procuring “own” resources.

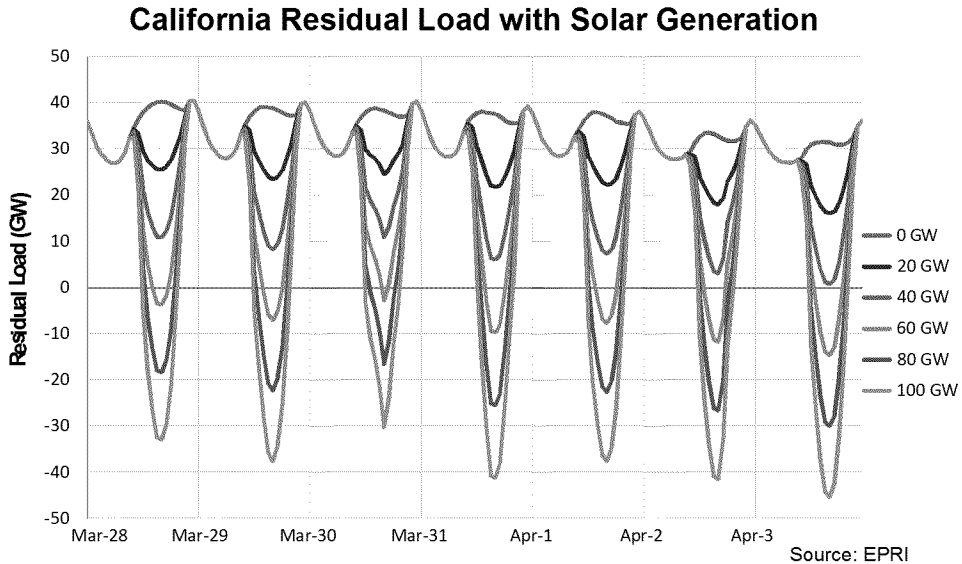


- Growing need to project uncertain potential future wholesale power prices, and incorporate them into modeling tools.
- Growing need to better understand how A/S and capacity markets may evolve, and impacts on future value of power resources.
- Planning methods will have to consider how ISOs/RTO markets will value different resource capabilities in the future.

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7. Improving Forecasting

- Key areas of forecasting are critical for robust long-term resource planning.
  - Electric load
  - DER adoption
  - Natural gas prices
  - Weather



- Need to better characterize natural uncertainty inherent in these key factors, and gain insights using computationally tractable methods.

- The ability to analyze “big data” related to DER, customer behavior, operations and other aspects of the future electric system may require new analysis capabilities and computational power.

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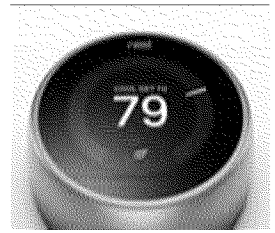
8. Incorporating Risk and Uncertainty

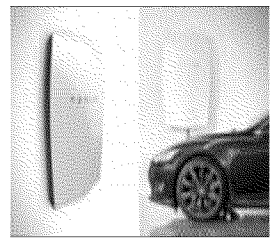
- Risk
  - Deterministic v. stochastic modeling – Deterministic modeling and scenario analysis may not be adequate. Planners may need to do more stochastic modeling to capture the inherent uncertainty in the electric system.
  - Non-market risks – Growing need to develop methods and approaches to evaluate "non-market" risks, such as a perceived lack of "fuel diversity," and the ability to respond to changes in the external operating, policy and regulatory environments.
- Uncertainty – Becoming increasingly important to incorporate forecast uncertainty and variability in future loads, VER production, and DER adoption and use.
  - Production profiles for VERs are uncertain over time horizons from minutes to years, with each different time horizon causing their own challenges
  - Capacity values for variable generation are uncertain
  - VERs can increase variability and volatility of energy prices
  - Increasing DR capabilities may make it more difficult to forecast load

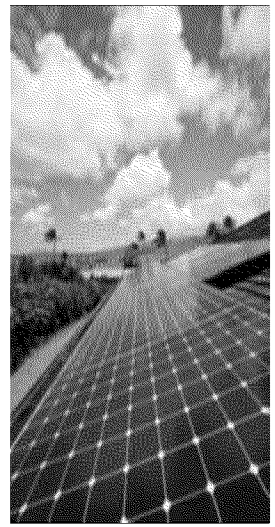
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9. Customer Behavior and Interaction

- Customer behavior is expected to have a direct and tangible impact on resource planning in the future.
- Some ways customer behavior and resource planning may interact include:
  - Behind the meter generation (e.g., solar PV)
  - DER approaches, such as EE and DR
  - Electric transportation, electrification, and smart devices
  - Electric rates and rate structures may impact consumer behavior, electric demand, and planning







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17cv01906 Sierra Club v. EPA

10. Expanding External Stakeholder Engagement

- The primary audience for company IRPs traditionally has been state PUCs and other regulators. Additional important audiences have included business associations, environmental and consumer advocates, and local non-governmental organizations (NGOs).
- In recent years, public expectations regarding involvement in company resource planning have changed dramatically
  - New stakeholders are engaged and participating in the planning process
  - Stakeholders want to address a broader array of issues than have been addressed in company resource planning in the past (e.g., rate design, rate setting, others…)
  - Stakeholders are becoming engaged in the entire resource planning process
- More companies now are engaged in designing and managing extensive stakeholder engagement processes related to resource planning activities.

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Part 3
Actions to Address IEN-P Challenges

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Actions to Address IEN-P Challenges

- EPRI Actions
  - Program research – provides essential pieces
  - Technology innovation – crosses disciplines and provides thought leadership
  - Demonstration programs
- Academia / National Labs / Consultants & Others
- Company actions — Examples include:
  - Duke Energy
  - Southern California Edison
  - Southern Company

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EPRI Programs that Explore Aspects of the IEN-P

Modeling the Changing Resource Mix

18. Electric Transportation
39. Grid Operations
55. Water Availability and Resource Risk Management
94. Energy Storage and Distributed Generation
170. End-use Energy Efficiency and Demand Response
173. Bulk System Integration of Variable Renewable Resources
174. Integration of Distributed Energy Resources
200. Distribution System Operations and Planning
201. Energy, Environmental and Climate Analysis

Ensuring Adequate System Attributes

40. Grid Planning
41.11.01. Flexible Nuclear Operations
66. Fossil Fleet for Tomorrow
178. Integrated Energy Systems Planning, Market Analysis and Technology Assessment
193. Renewable Generation

New Inputs for Resource Planning

182. Understanding Electric Utility Customers
198. Strategic Sustainability Science
199. Electrification for Customer Productivity

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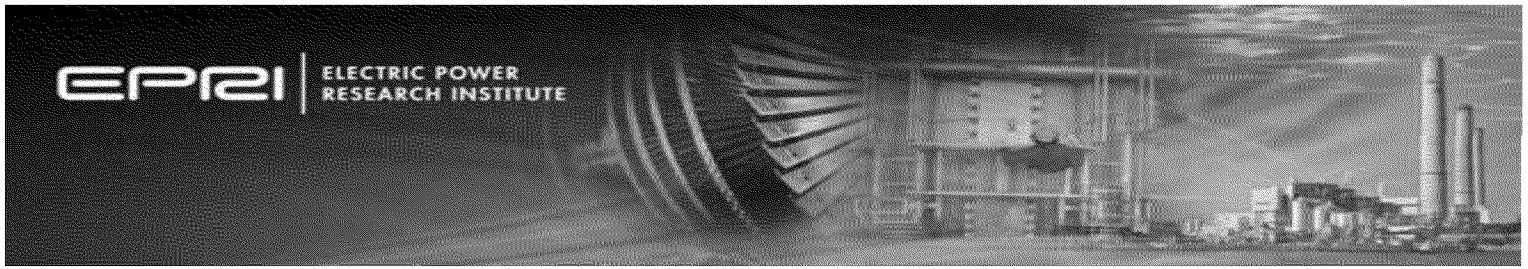
Technology Innovation Modeling Projects for 2018 (tentative)	ENV	GEN	PDU	NUC
Framework for Integrated Energy Network Planning (IEN-P) – Phase 2	x		x	
Co-Optimization of Generation and Transmission Expansion Investment Decisions	x	x	x	
Linking Distribution and Transmission Models to Assess Impact of DER on Bulk System	x	x	x	
Benchmarking EPRI Production Cost and Capacity Expansion Modeling Tools	x		x	
Screening of Hourly Power Flow Scenarios for Stability and Reliability Assessments			x	
Integrating a Customer Model into EPRI Modeling Tools for Generation, Transmission, and Distribution Operations and Planning	x		x	
Market Design and Resource Expansion Framework to Ensure System Resiliency	x	x	x	
Reduced-Form Air Quality Modeling Tools for Timely, Cost-Efficient, Multiple US-REGEN Scenario Analysis	x			
Endogenizing Emerging Technology Learning Curves in US-REGEN	x	x	x	x
Power System Strategic Analyses Dataset	x	x	x	x
Potential Biopower Systems for U.S. Deep Decarbonization	x	x		
Analysis of US-Canada Electric Sector Interactions with a Focus on Hydropower	x	x		
Assessing the System Value of Advanced Generation Technologies	x	x	x	
Hydro Valuation in High Variable Generation Future	x	x	x	
Hydrogen Technology Modeling Initiative	x	x	x	x
Demo Fund Projects for 2017-8				
Framework for Integrated G,T, & D Planning	x	x	x	x

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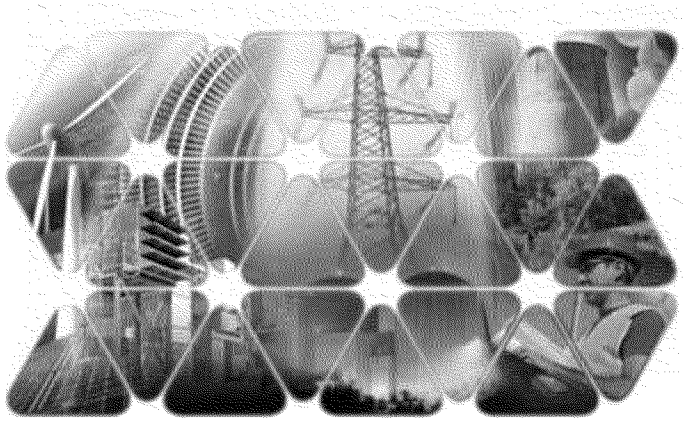
Next Steps



- Q4 2017: Publish IEN-P whitepaper
- Q2 2018: Publish EPRI TI whitepaper on linking G, T & D planning tools
- Q4 2018: IEN-P case studies / workshop
- On-going: EPRI annual research program R&D efforts



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Together…Shaping the Future of Electricity

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Appendix
Summary of EPRI IEN-P Research

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Research Summary (1 of 3)

- **Framework for Integrated Energy Network Planning (IEN-P) – Phase 2:** Continue EPRI's efforts to develop a more comprehensive Framework for Integrated Energy Network Planning (2 years) * *
- **Co-Optimization of Generation and Transmission Investment Decisions:** Investigate state-of-the-art approaches while proposing improvements and/or developing new techniques for practical implementation (2 years) * * *
- **Linking Distribution and Transmission Models to Assess Impact of DER on Bulk System:** Develop a link between EPRI's DER hosting capacity tools for Distribution and Transmission (2 years) * * *
- **Benchmarking Production Cost and Capacity Expansion Modeling Tools:** Benchmark EPRI's EGEAS software against other models; Assess applicability of EGEAS for solving some of the key IEN-P challenges (3 years) * *
- **Screening of Hourly Power Flow Scenarios for Stability and Reliability Assessments:** Develop a high-level, steady-state screening framework and set of metrics to identify critical scenarios requiring detailed steady-state and time-domain dynamic analysis (2 years) *

* = ENV, * = GEN, * = PDU, * = NUC

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Research Summary (2 of 3)

- **Integrating a Customer Model into EPRI Modeling Tools for G, T & D Operations and Planning:** Develop analytical tools for customer model on technology adoption and usage and the impact on electricity demand; Integrate with EPRI planning models (3 years) * *
- **Market Design and Resource Expansion Framework to Ensure System Resiliency:** Evaluate the market design and resource expansion changes needed to ensure systems remain reliable during extreme events or recovers quickly from such an event (2 years) * * *
- **Reduced-Form Air Quality Modeling Tools for Timely, Cost-Efficient, Multiple US-REGEN Scenario Analysis:** Develop a model that interfaces with US-REGEN to estimate air quality impacts from multiple scenarios quickly, efficiently, and at lower costs than traditional complex chemical transport models (1 year) *
- **Endogenizing Emerging Technology Learning Curves in US-REGEN:** Improve the representation of innovation and technological change for emerging technologies within US-REGEN by developing and implementing endogenous learning (2 years) * * * *
- **Power System Strategic Analyses Dataset:** Develop a sustainable approach for maintaining the data needed to support detailed quantitative analyses; Exercise the data and tools to demonstrate the integrated grid cost-benefit methodology (2 years) * * * *

* = ENV, * = GEN, * = PDU, * = NUC

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Research Summary (3 of 3)

- **Potential Biopower Systems for Deep Decarbonization:** Provide characterizations of future advanced biopower systems, deployment, and value for deep decarbonization of the energy system (1 year) * *
- **Analysis of US-Canada Electric Sector Interactions with a Focus on Hydropower:** Add representation of the Canadian power system to US-REGEN; Analyze US-Canada electric sector interactions, including focused evaluation of Canadian hydropower energy (2 years) * *
- **Assessing the System Value of Advanced Generation Technologies:** Assess existing tools/models for high-level analysis of system cost and value of advanced generation technologies (2 years) * * * *
- **Hydro Valuation in High Variable Generation Future:** Examine modeling needs and develop a methodology to assess the value of hydro in a system with high penetration of variable generation (2 years) * * *
- **Hydrogen Technology Modeling Initiative:** Utilize EPRI modeling tools to evaluate scenarios where H_2 technologies could be a least-cost option to meet grid operations requirements and inform investment decisions in technology demonstrations and/or assets (2 years) * * * *

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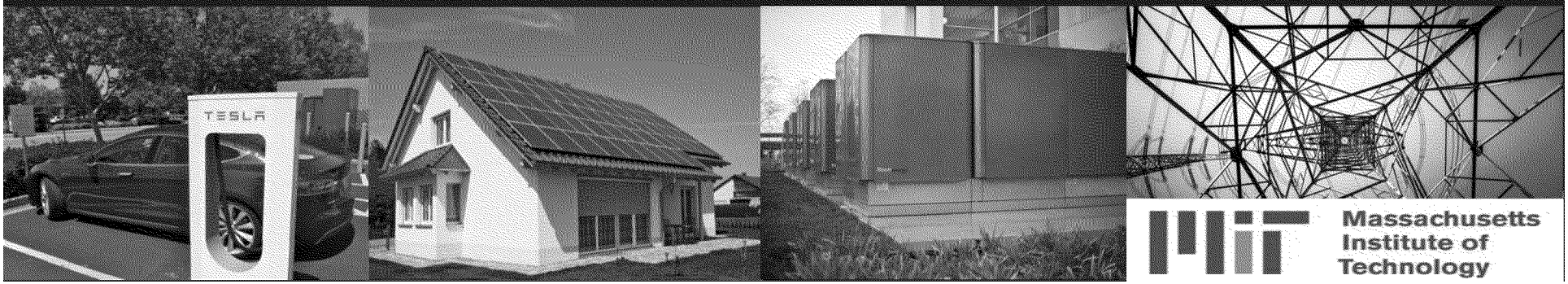
POWER SYSTEM PLANNING WITH DISTRIBUTED ENERGY RESOURCES

NEW TRADEOFFS, METHODS AND INSIGHTS

Jesse D. Jenkins

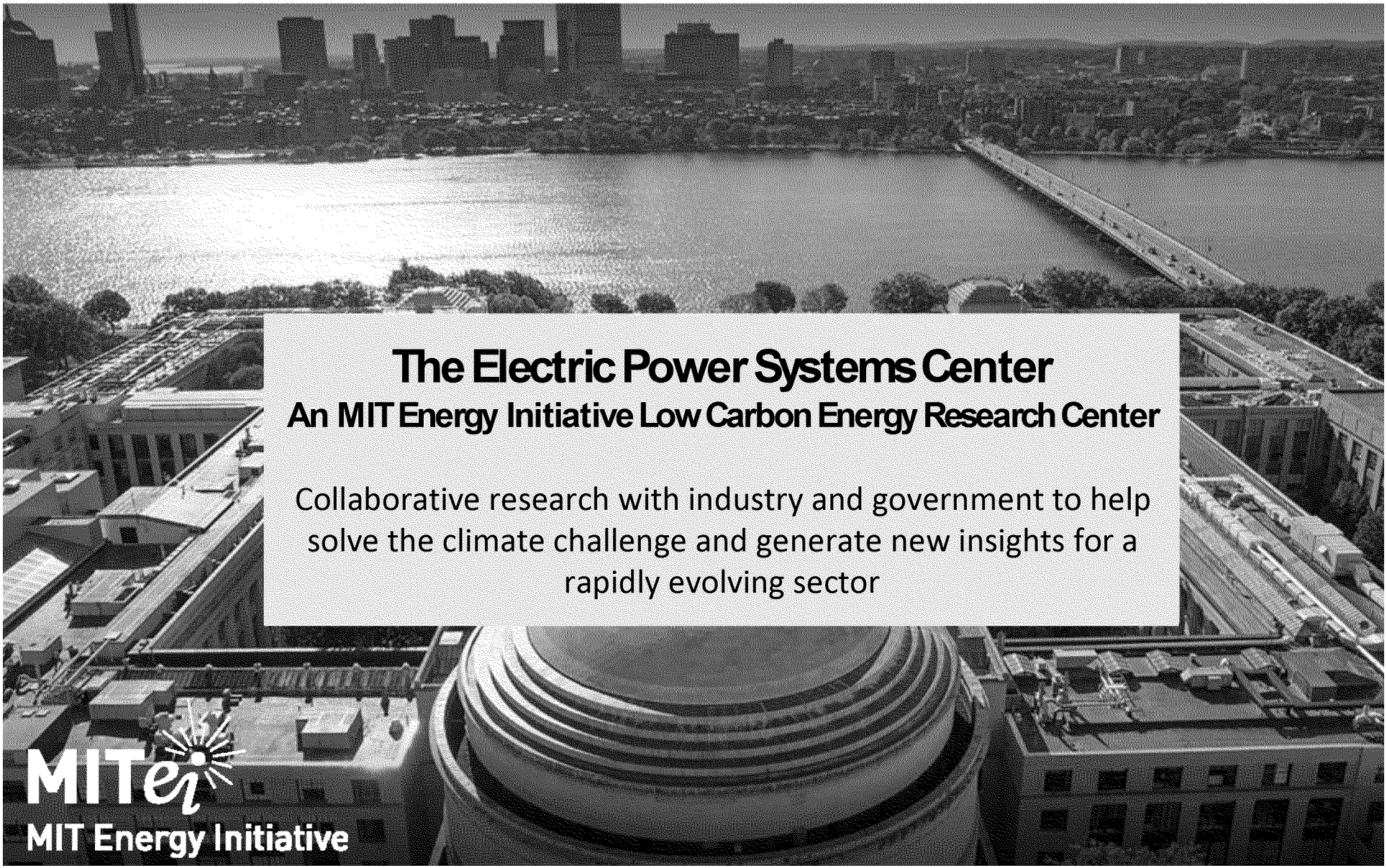
EPRI 36th Seminar on Fuels, Power Markets, and Resource Planning

November 8th, 2017 — Washington, DC



Massachusetts Institute of Technology

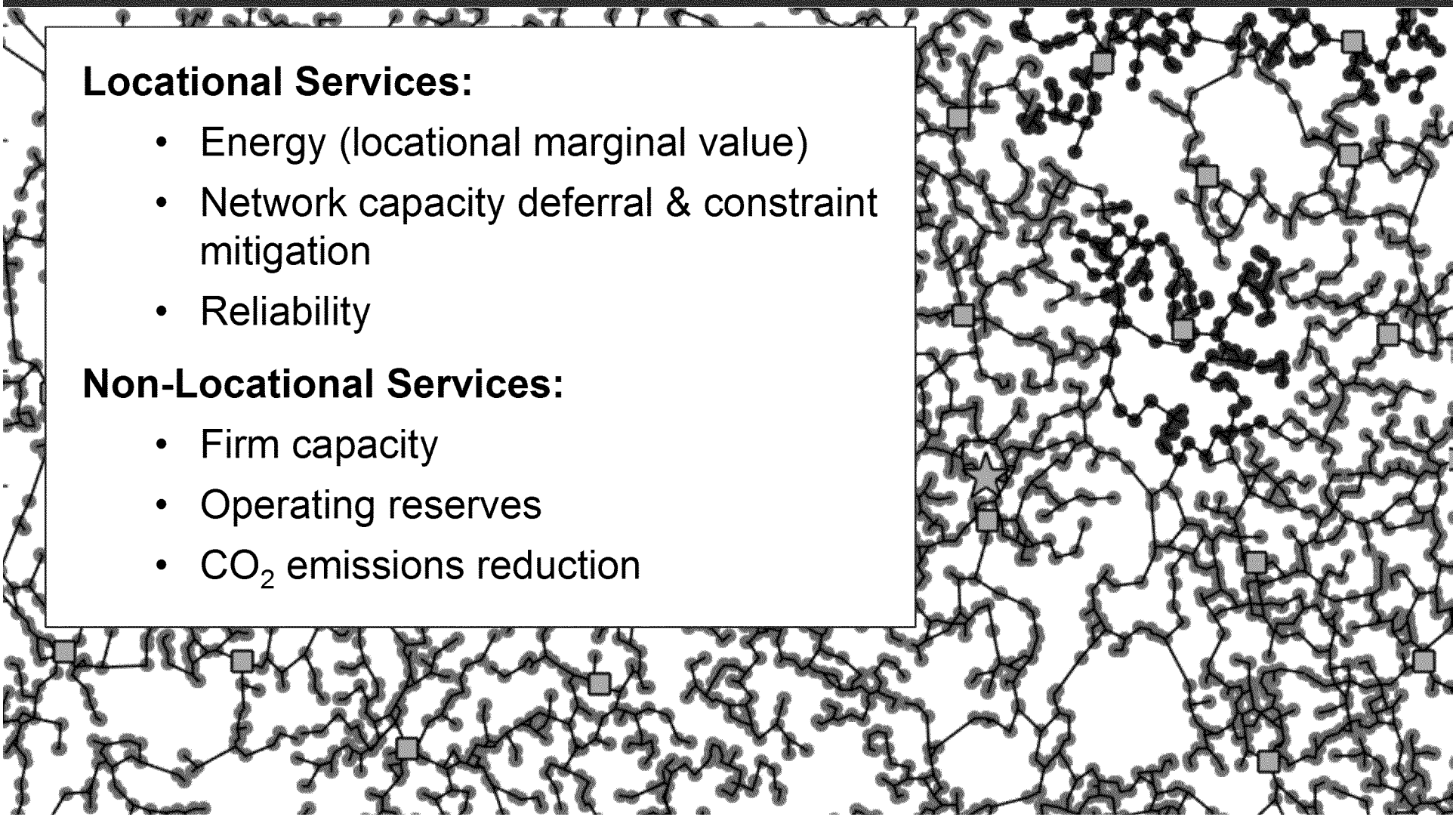

MITei
MIT Energy Initiative
UTILITY OF THE FUTURE
An MIT Energy Initiative response to an industry in transition
In collaboration with IIT-Comillas
Full report available at:
http://energy.mit.edu/uof


The Electric Power Systems Center
An MIT Energy Initiative Low Carbon Energy Research Center
Collaborative research with industry and government to help solve the climate challenge and generate new insights for a rapidly evolving sector
MITei
MIT Energy Initiative

Part 1:

NEW TRADEOFFS AND CHALLENGES FOR POWER SYSTEM PLANNING

LOCATION, LOCATION, LOCATION!



Locational Services:

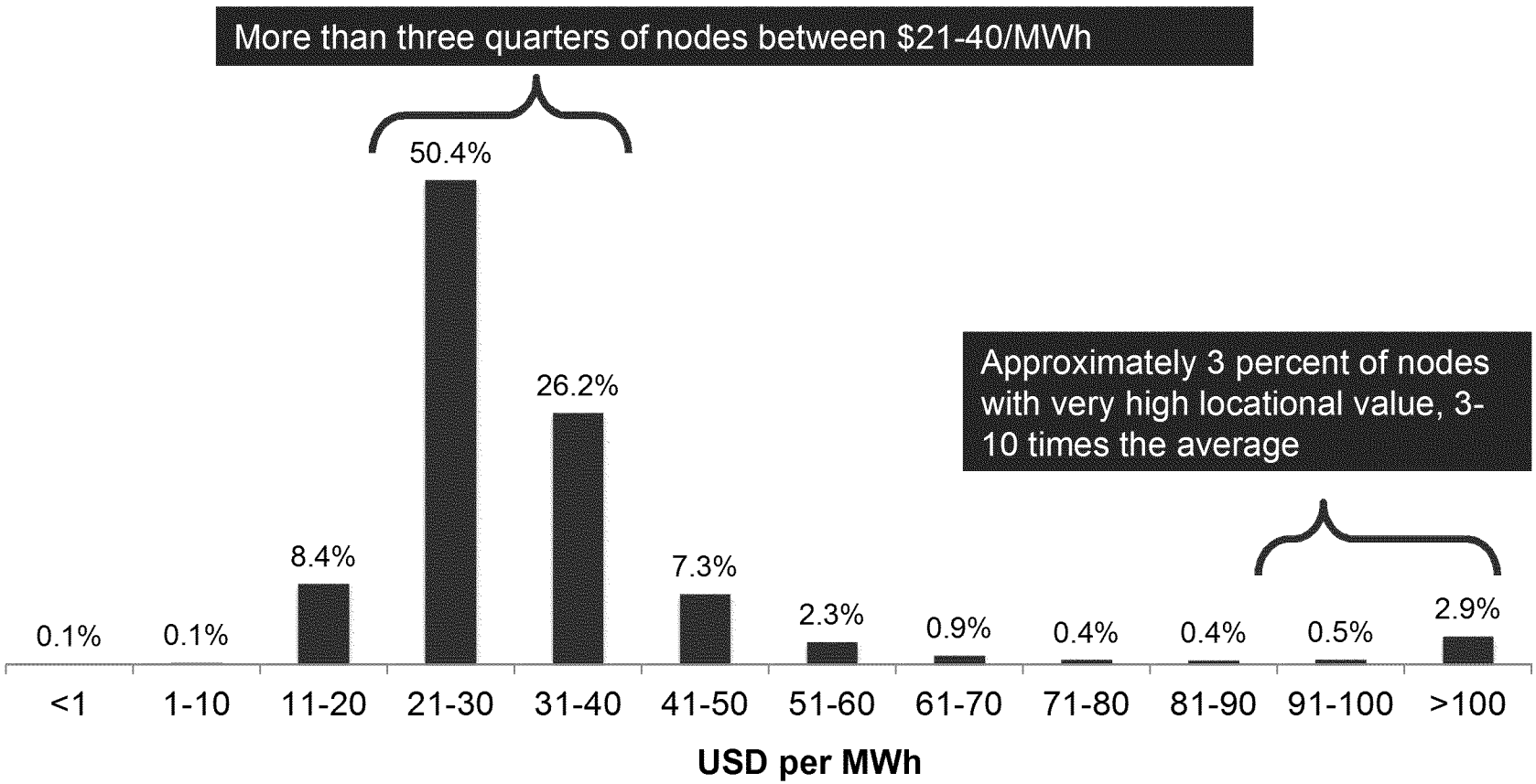
- Energy (locational marginal value)
- Network capacity deferral & constraint mitigation
- Reliability

Non-Locational Services:

- Firm capacity
- Operating reserves
- CO_2 emissions reduction

1. LOCATIONAL VALUE VARIES DRAMATICALLY

Distribution of 2015 annual average nodal LMPs in PJM

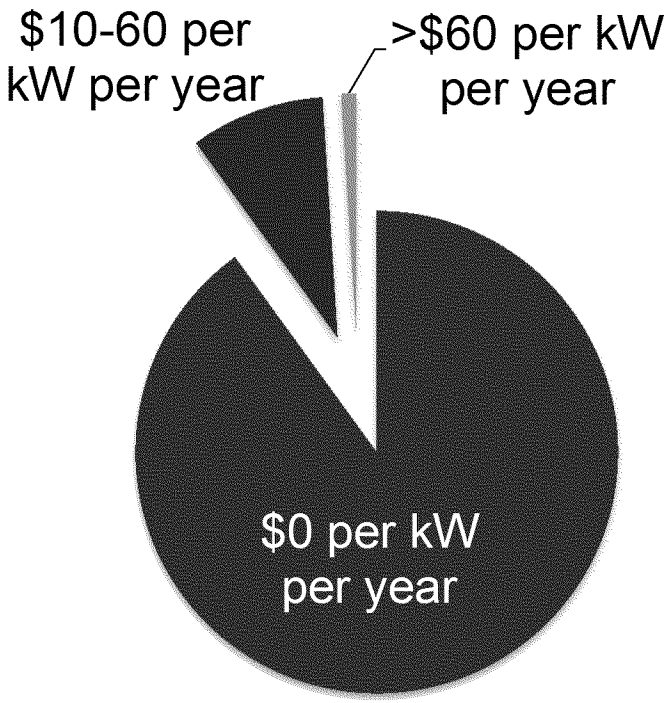


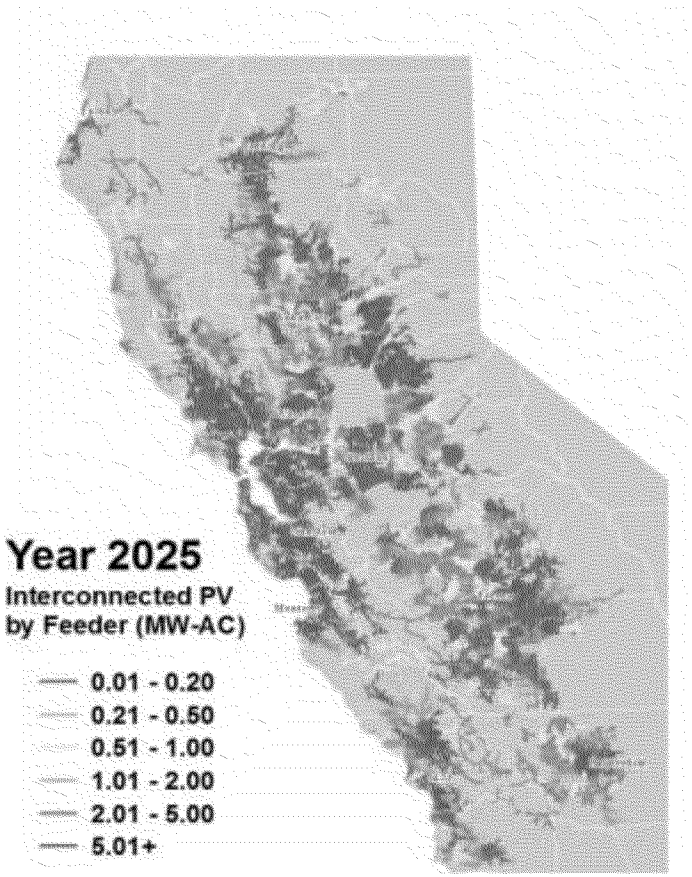
See: Pérez-Arriaga et al. 2016. *The Utility of the Future: an MIT Energy Initiative response to an industry in transition*. Cambridge, MA: Massachusetts Institute of Technology. http://energy.mit.edu/research/utility-future-study/

1. LOCATIONAL VALUE VARIES DRAMATICALLY

Network capacity benefits of distributed solar PV in California

(Cohen, Kauzmann & Callaway, 2016)

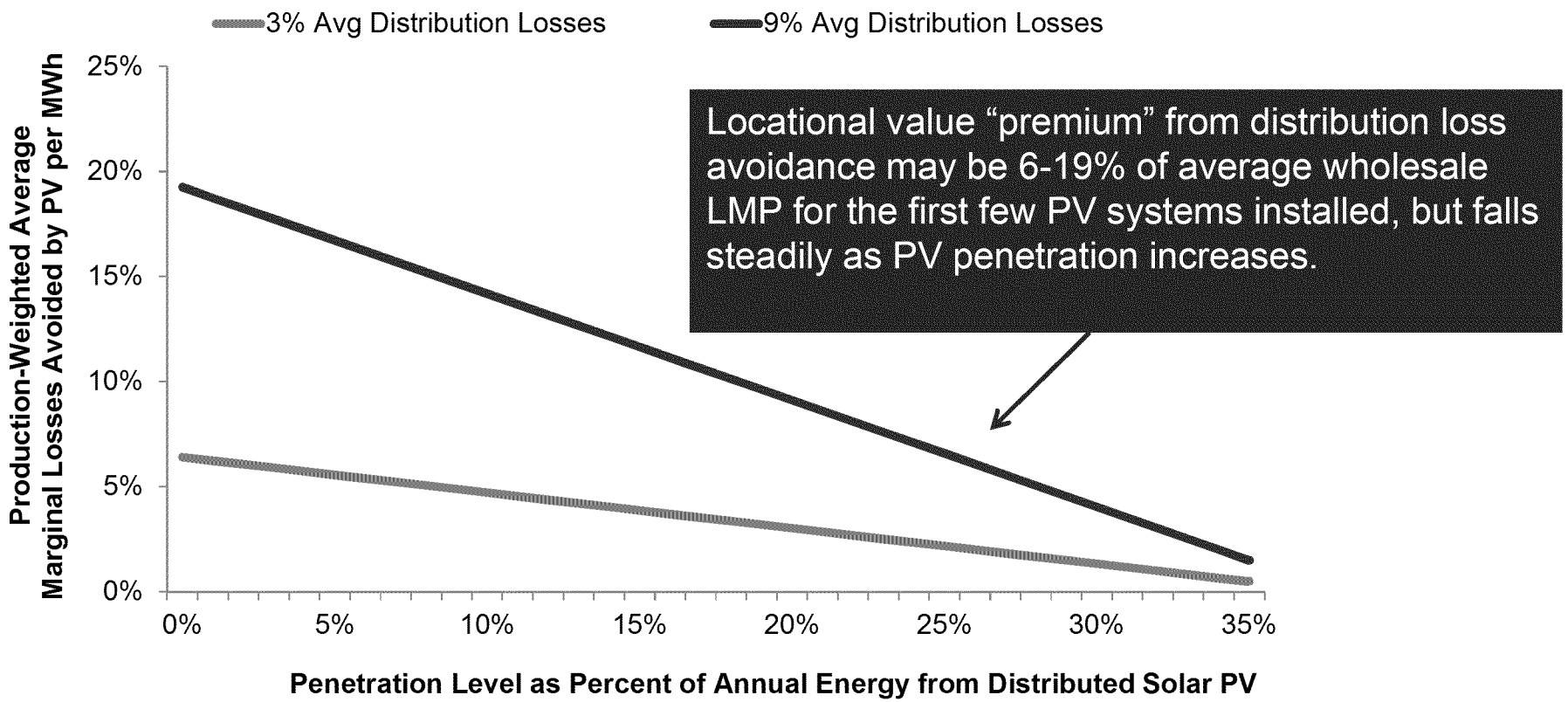




See: M.A. Cohen, P.A. Kauzmann, D.S. Callaway, Effects of distributed PV generation on California's distribution system, part 2: Economic analysis, Solar Energy, Volume 128, 2016, 139–152

2. MARGINAL LOCATIONAL VALUE DECLINES

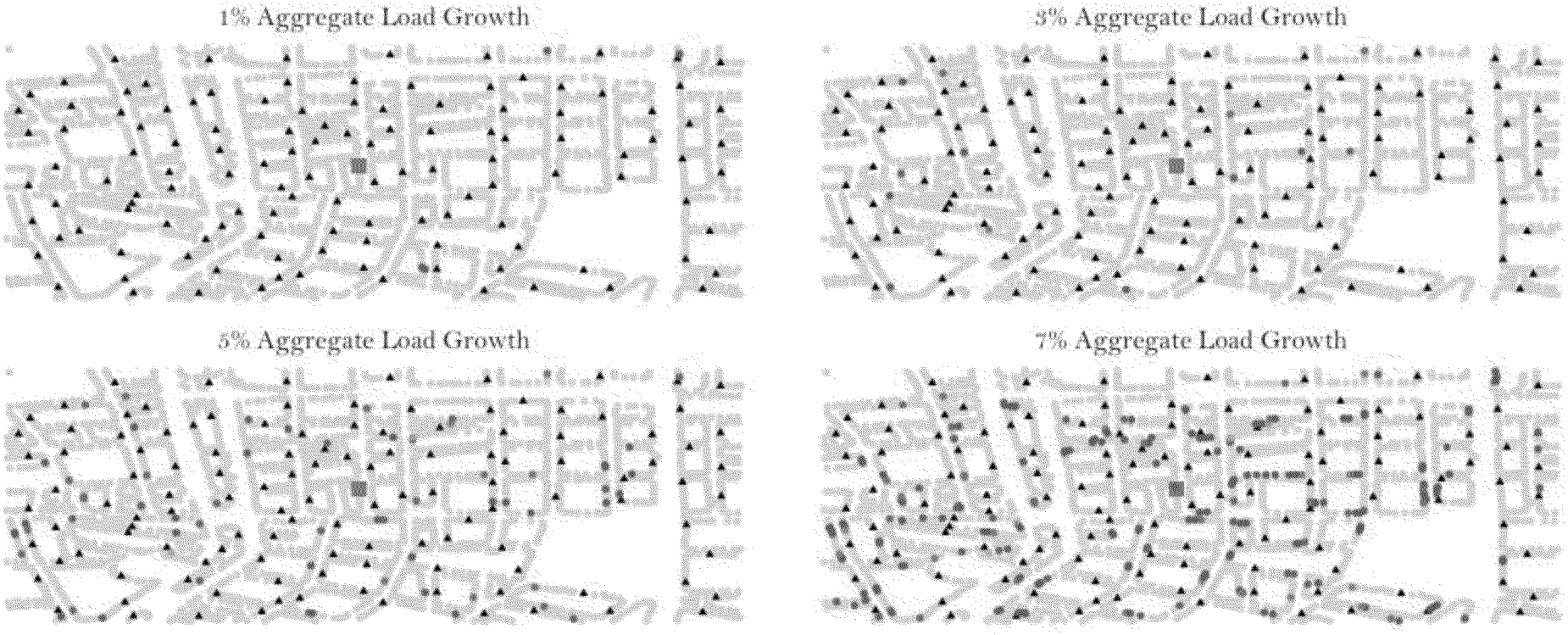
Marginal value of distribution network losses avoided by distributed solar PV as penetration increases (Texas ERCOT Example)



See: Pérez-Arriaga et al. 2016. *The Utility of the Future: an MIT Energy Initiative response to an industry in transition*. Cambridge, MA: Massachusetts Institute of Technology. http://energy.mit.edu/research/utility-future-study/

2. MARGINAL LOCATIONAL VALUE DECLINES

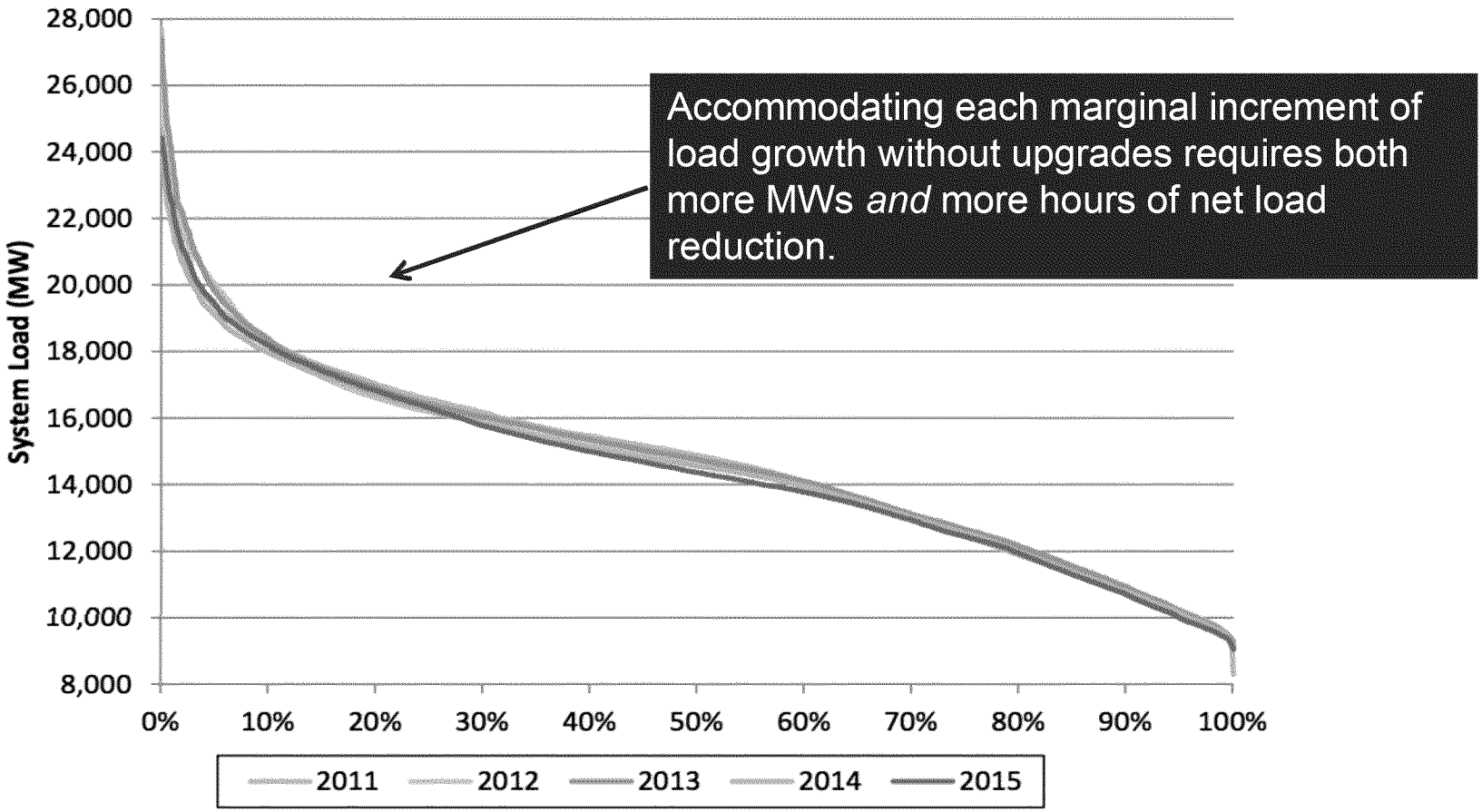
Distribution of load curtailment/self-generation necessary to accommodate load growth without network reinforcement – European urban network case



Source: Jenkins, Luke & Vargara, forthcoming

2. MARGINAL LOCATIONAL VALUE DECLINES

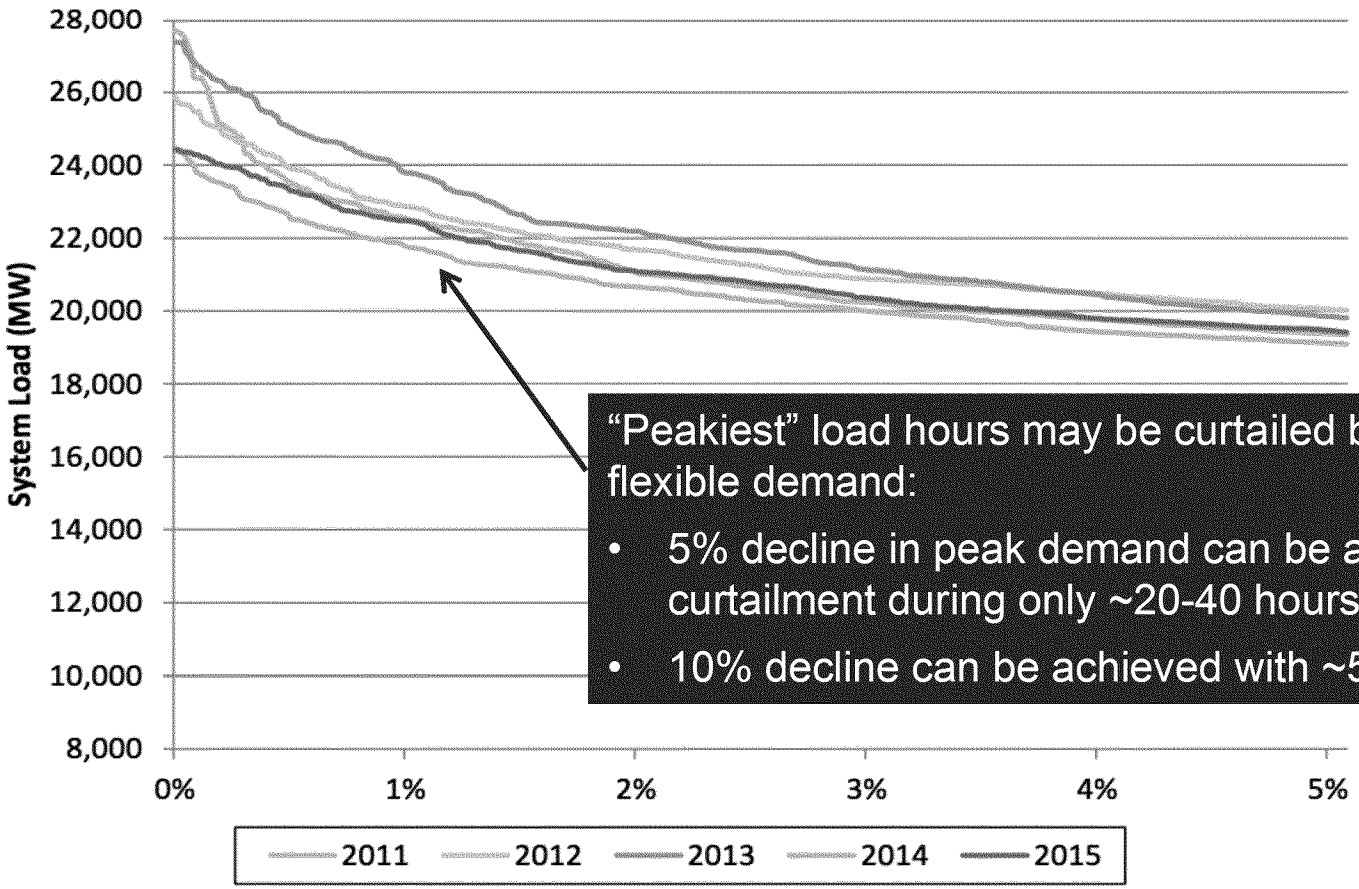
Load duration curve for ISO New England, 2011-2015, all hours.



Source: ISO New England (2015), "ISO New England's Internal Market Monitor 2015 Annual Markets Report."

3. COMPETITION BETWEEN RESOURCES

Load duration curve for ISO New England, 2011-2015, top 5% hours



"Peakiest" load hours may be curtailed by price responsive or flexible demand:

- 5% decline in peak demand can be achieved via curtailment during only ~20-40 hours of the year.
- 10% decline can be achieved with ~50-100 hours.

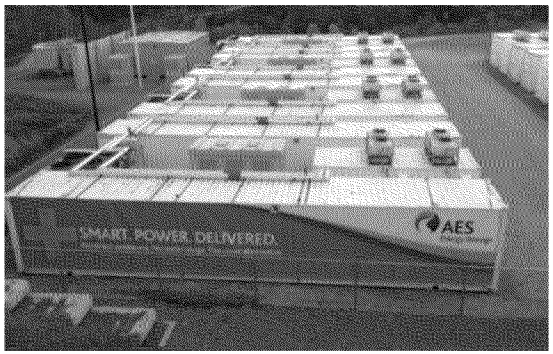
Source: ISO New England (2015), "ISO New England's Internal Market Monitor 2015 Annual Markets Report."

4. ECONOMIES OF SCALE STILL MATTER

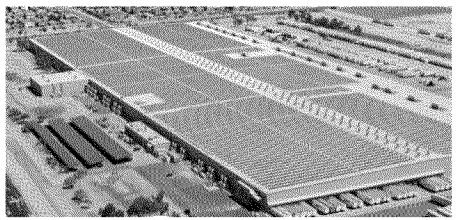
Economies of unit scale vs locational value

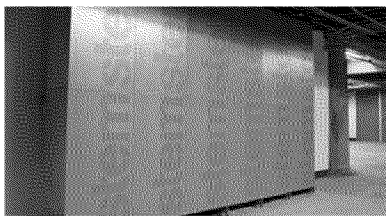
Utility Scale



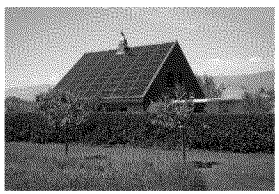


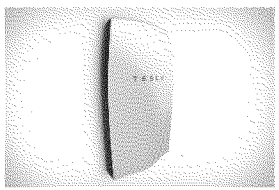
C&I Scale





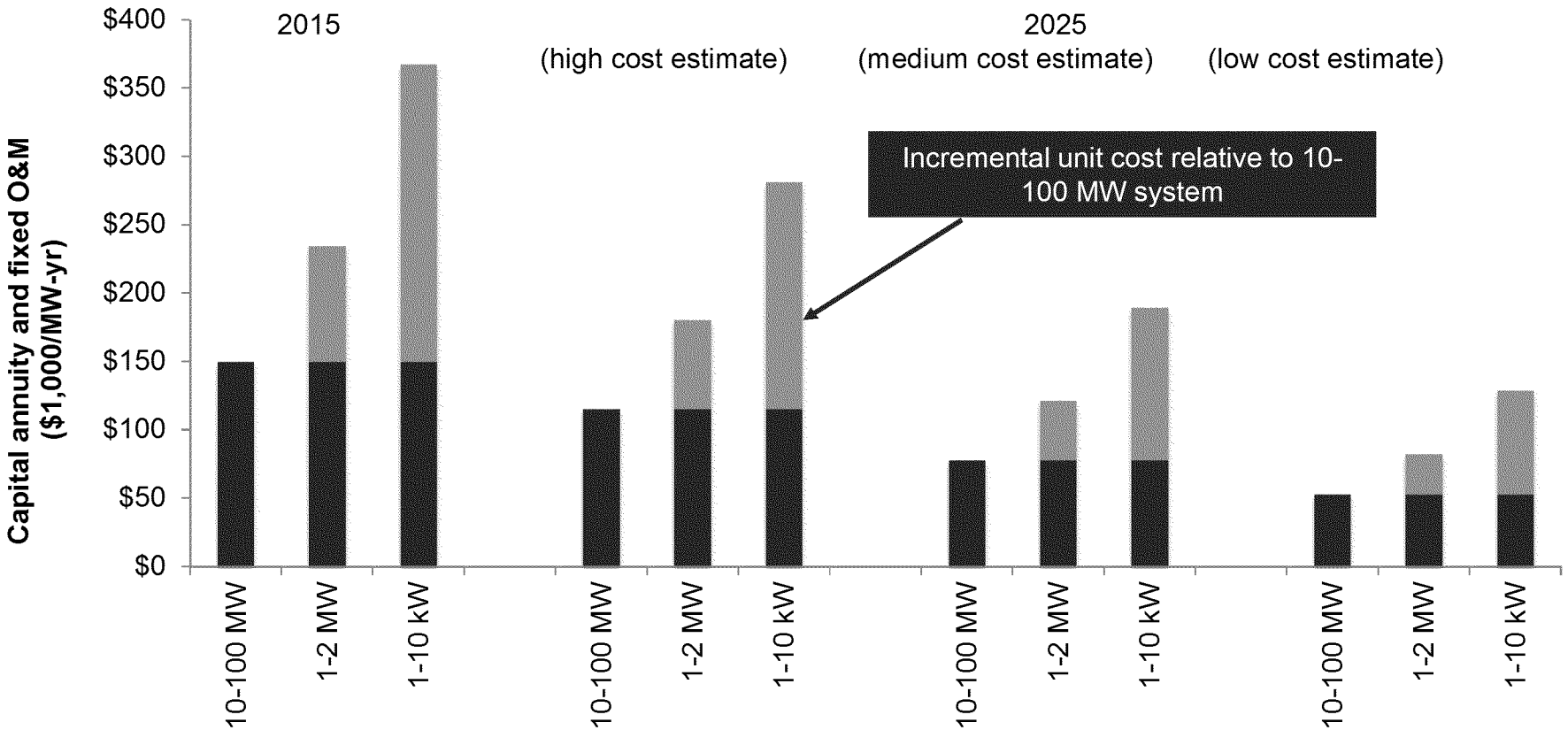
Residential Scale





4. ECONOMIES OF SCALE STILL MATTER: SOLAR PV

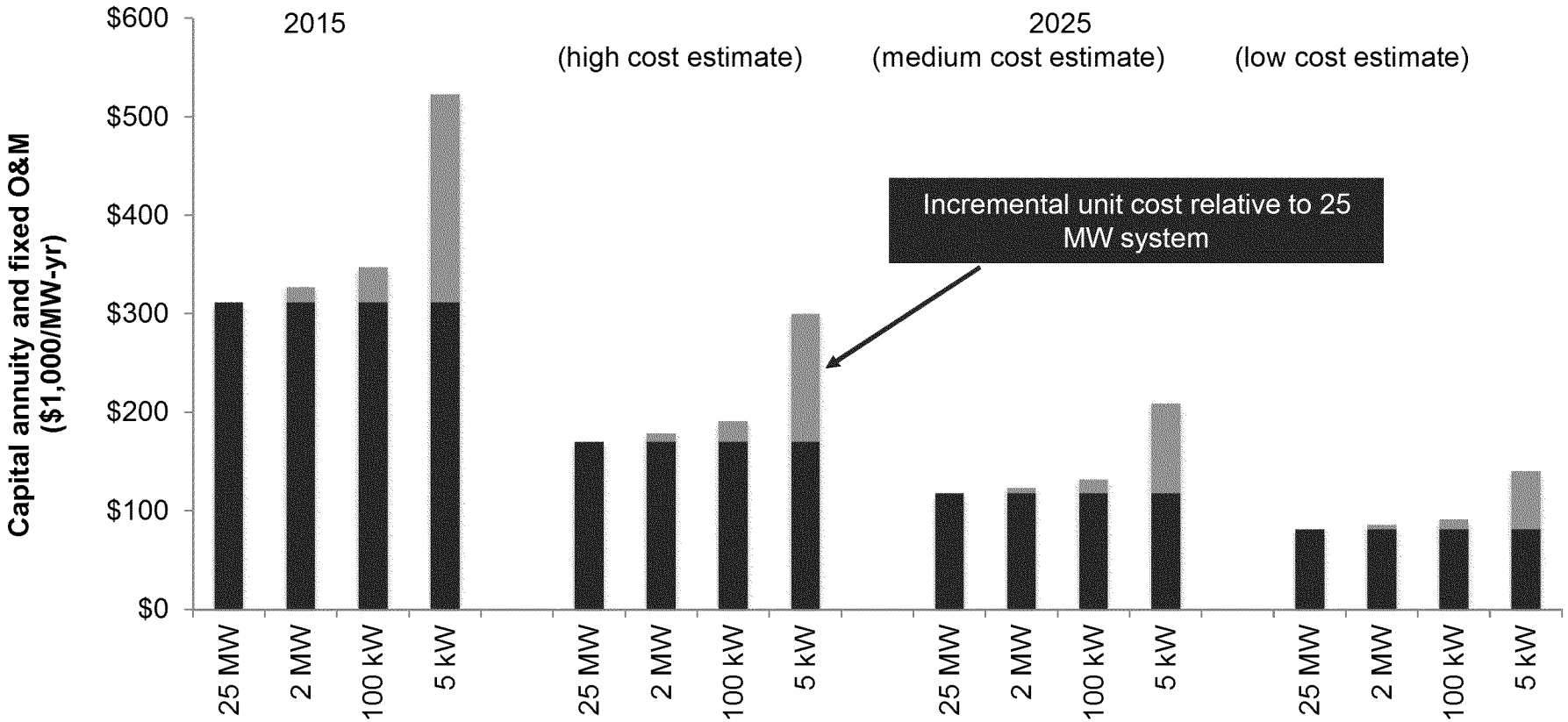
Estimated economies of unit scale for fixed-tilt U.S. solar PV systems: Annual cost of ownership in 2015 and projected for 2025



See: Pérez-Arriaga et al. 2016. *The Utility of the Future: an MIT Energy Initiative response to an industry in transition*. Cambridge, MA: Massachusetts Institute of Technology. http://energy.mit.edu/research/utility-future-study/

4. ECONOMIES OF SCALE STILL MATTER: ENERGY STORAGE

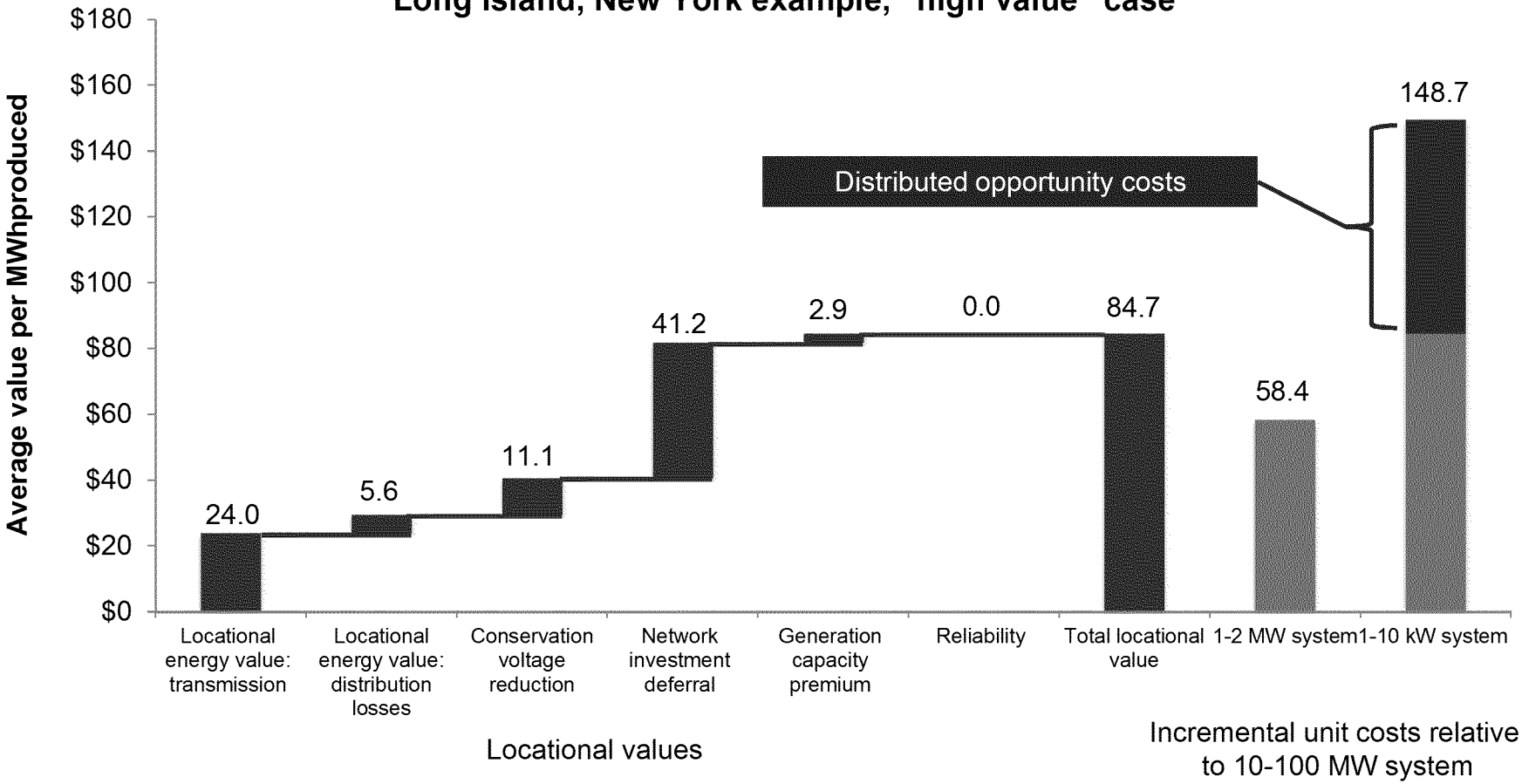
Estimated economies of unit scale for Li-ion energy storage systems (1:2 power to energy ratio): Annual cost of ownership in 2015 and projected for 2025



See: Pérez-Arriaga et al. 2016. *The Utility of the Future: an MIT Energy Initiative response to an industry in transition*. Cambridge, MA: Massachusetts Institute of Technology. http://energy.mit.edu/research/utility-future-study/

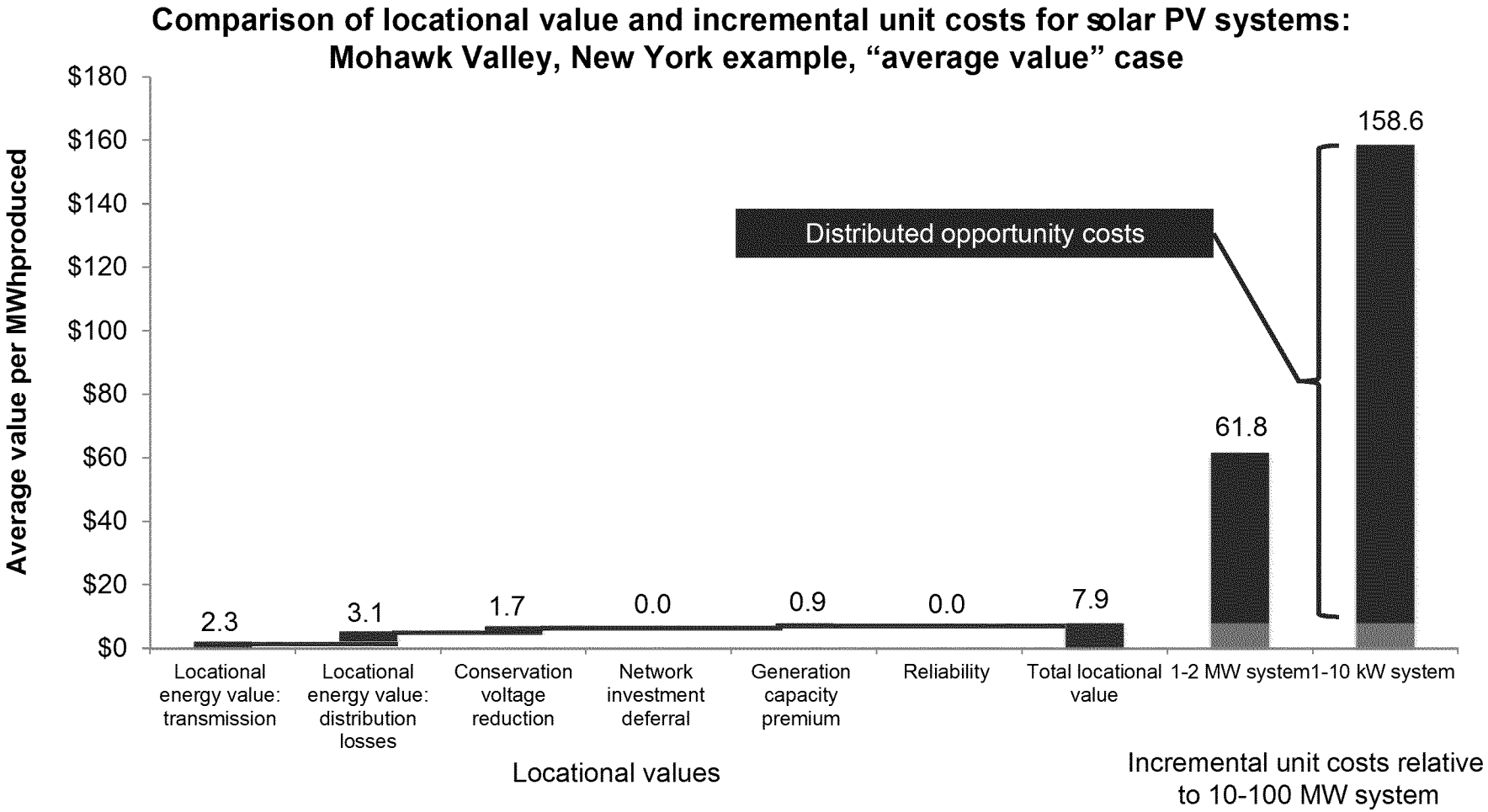
5. BE WARY OF DISTRIBUTED OPPORTUNITY COSTS

Comparison of locational value and incremental unit costs for solar PV systems: Long Island, New York example, "high value" case



See: Pérez-Arriaga et al. 2016. *The Utility of the Future: an MIT Energy Initiative response to an industry in transition*. Cambridge, MA: Massachusetts Institute of Technology. http://energy.mit.edu/research/utility-future-study/

5. BE WARY OF DISTRIBUTED OPPORTUNITY COSTS



See: Pérez-Arriaga et al. 2016. *The Utility of the Future: an MIT Energy Initiative response to an industry in transition*. Cambridge, MA: Massachusetts Institute of Technology. http://energy.mit.edu/research/utility-future-study/

Part 2:

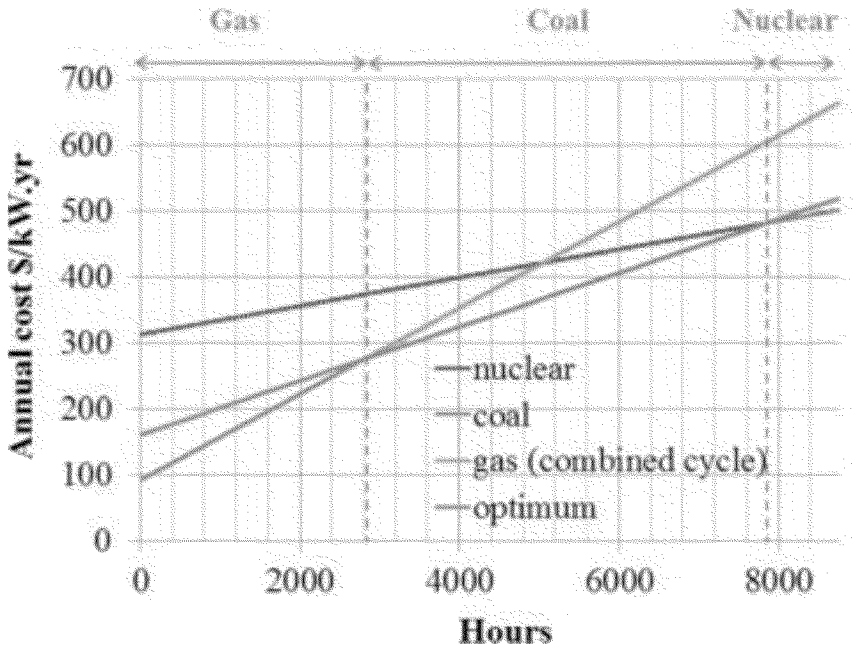
NEW COMPUTATIONAL TOOLS FOR SYSTEM PLANNING WITH DERS

17cv01906 Sierra Club v. EPA

ED_001523_00006099-00017

PUSHING THE BOUNDARIES OF CAPACITY PLANNING

Load Duration and Screening Curve Based Methods



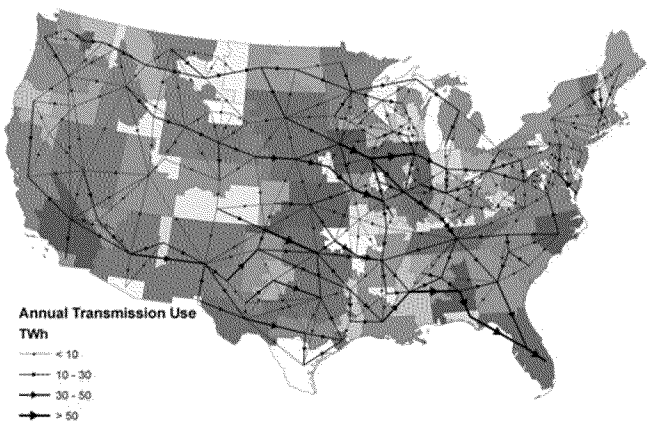
PUSHING THE BOUNDARIES OF CAPACITY PLANNING

Load Duration and Screening Curve Based Methods

Incorporating Flexibility

Incorporating Networks



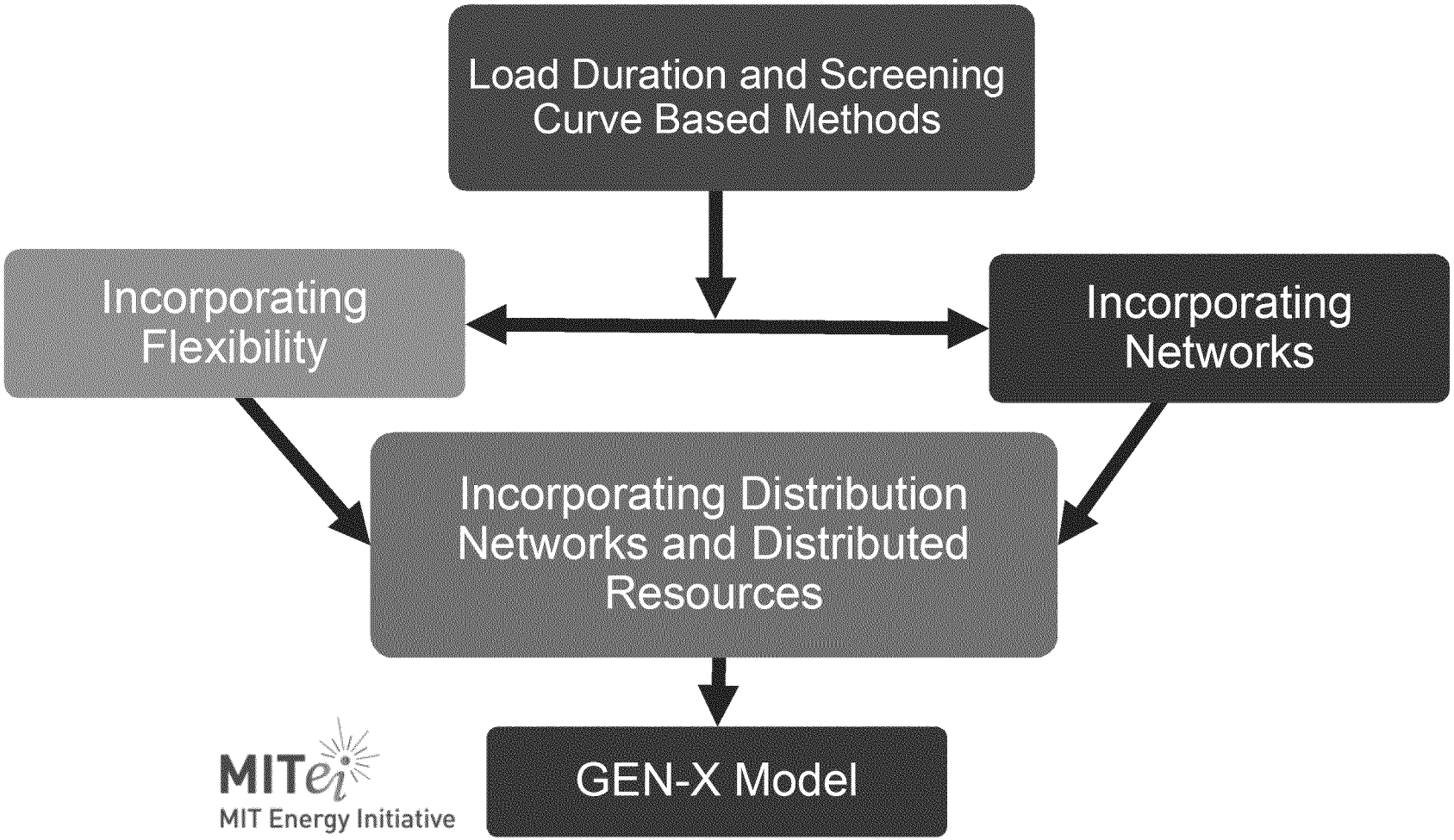


MITei MIT Energy Initiative

Integer Clustering (Palmintier)
Time Domain Reduction (de Sisternes)

NREL NATIONAL RENEWABLE ENERGY LABORATORY REEDS Model

PUSHING THE BOUNDARIES OF CAPACITY PLANNING



THE GEN-X MODEL

Minimize:

(1) Sum of investment, fixed O&M and network reinforcement costs;

(2) Sum of variable O&M and fuel costs per hour;

(3) Sum of cost (or value) of other services provided by DERs (e.g. voltage regulation, back-up power);

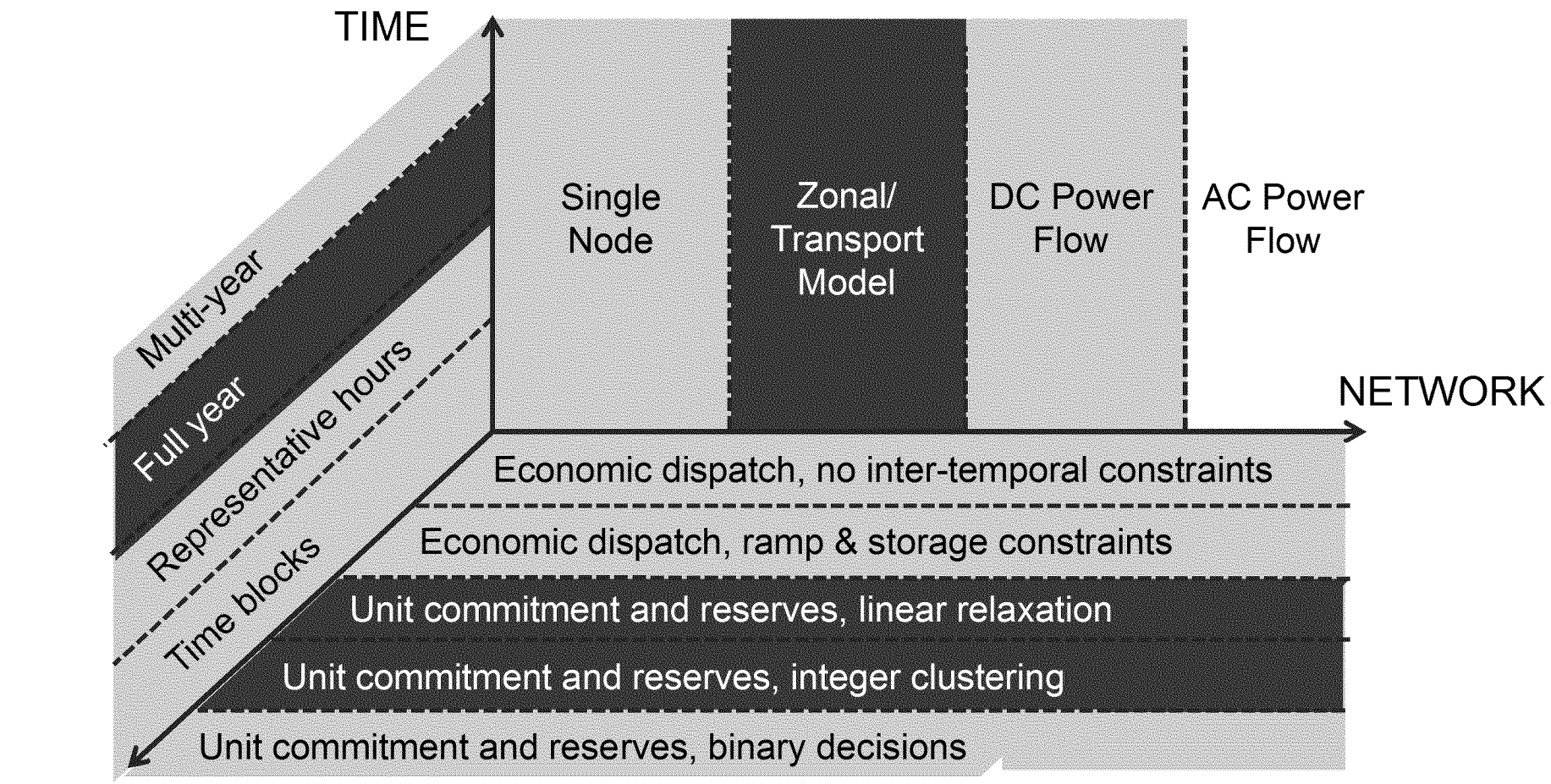
(4) Sum of cost of curtailed demand and unmet operating reserves for each hour

Subject to…

- Operational constraints on thermal generators, dispatchable renewables, energy storage, deferrable (schedulable) demand, and demand curtailment (price-responsive demand)
- Network power flow constraints

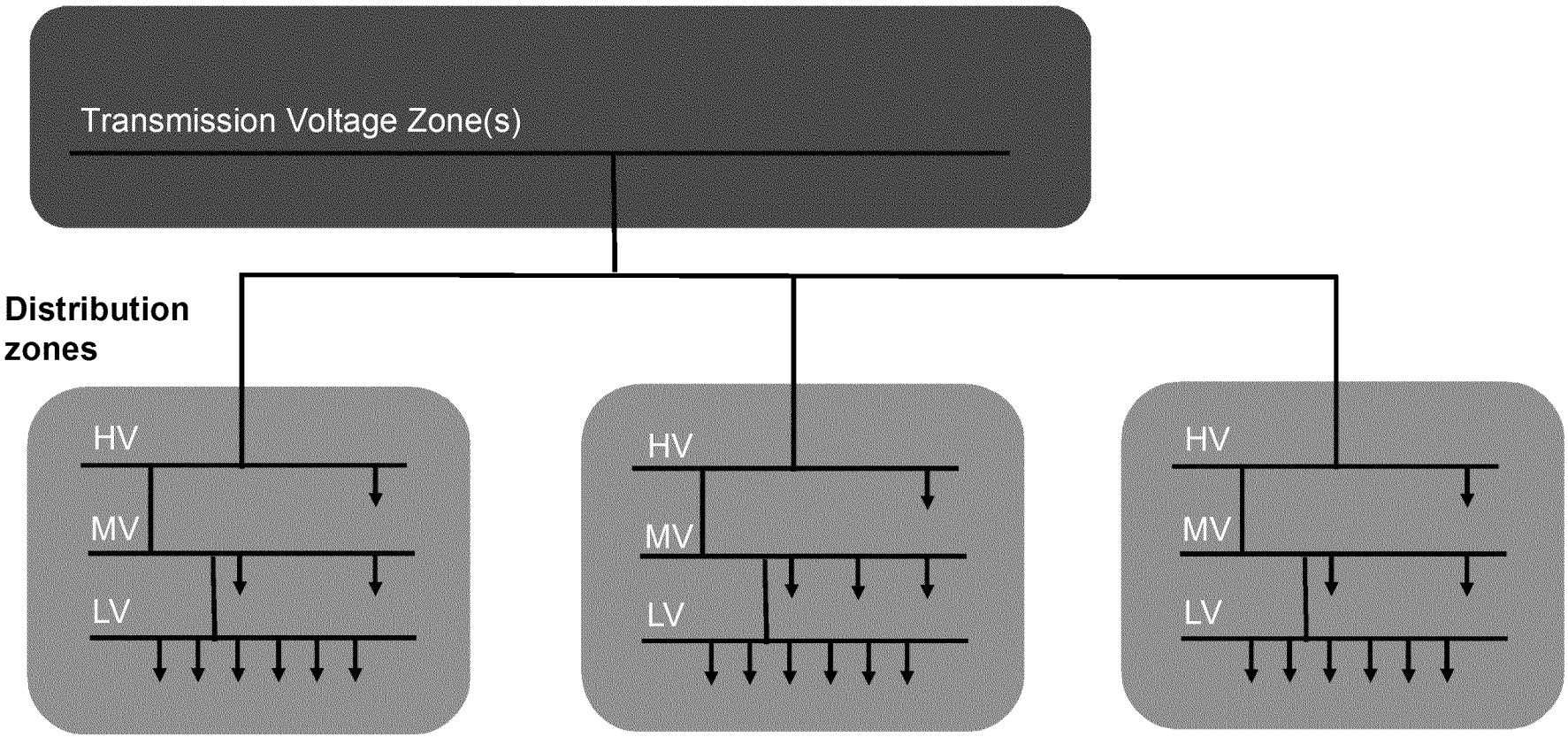
Jenkins & Sepulveda (2017) - http://bit.ly/GenXModel

WRESTLING WITH DIMENSIONALITY



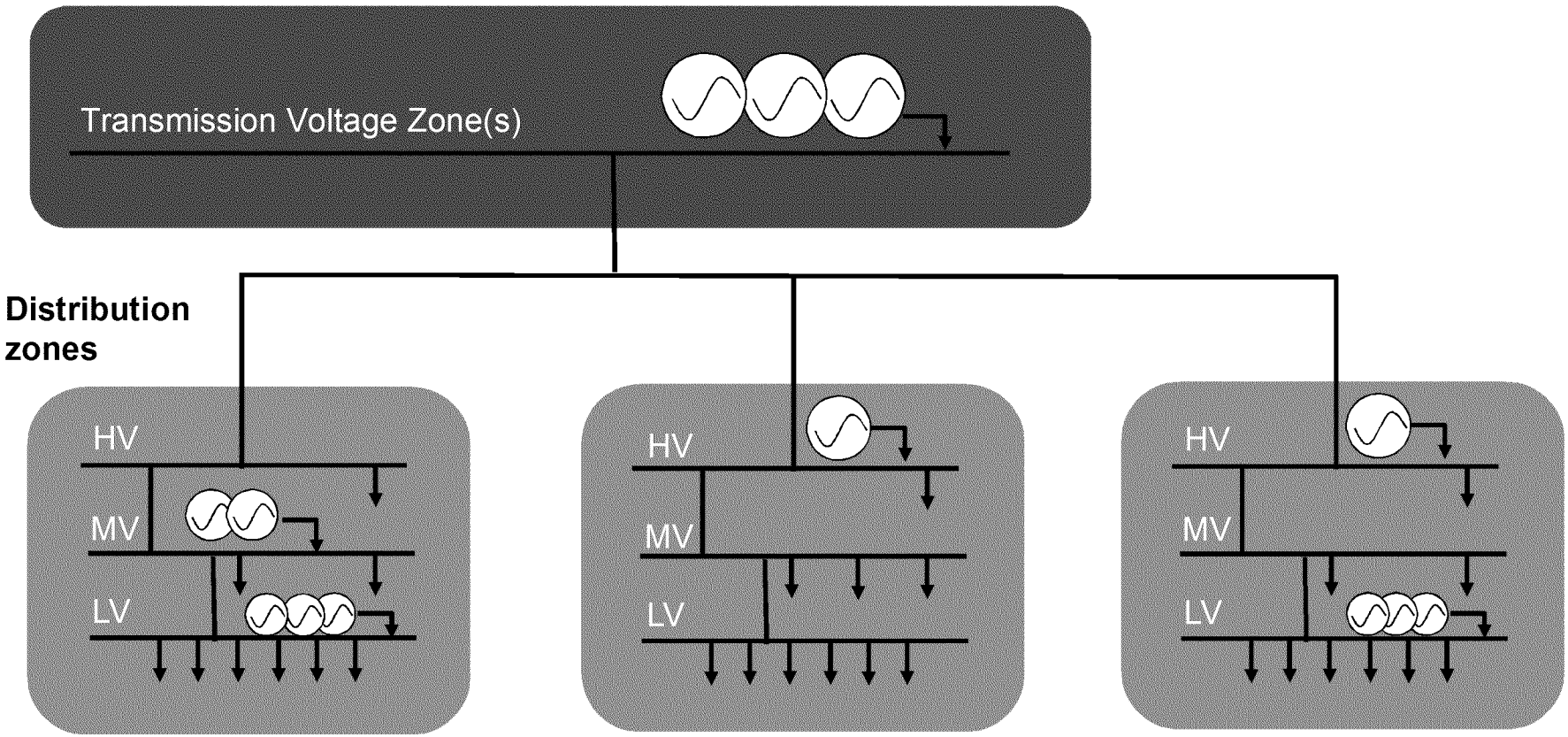
CAPACITY PLANNING WITH DISTRIBUTED RESOURCES

Multi-zonal structure with multiple distribution voltage zones and voltage levels



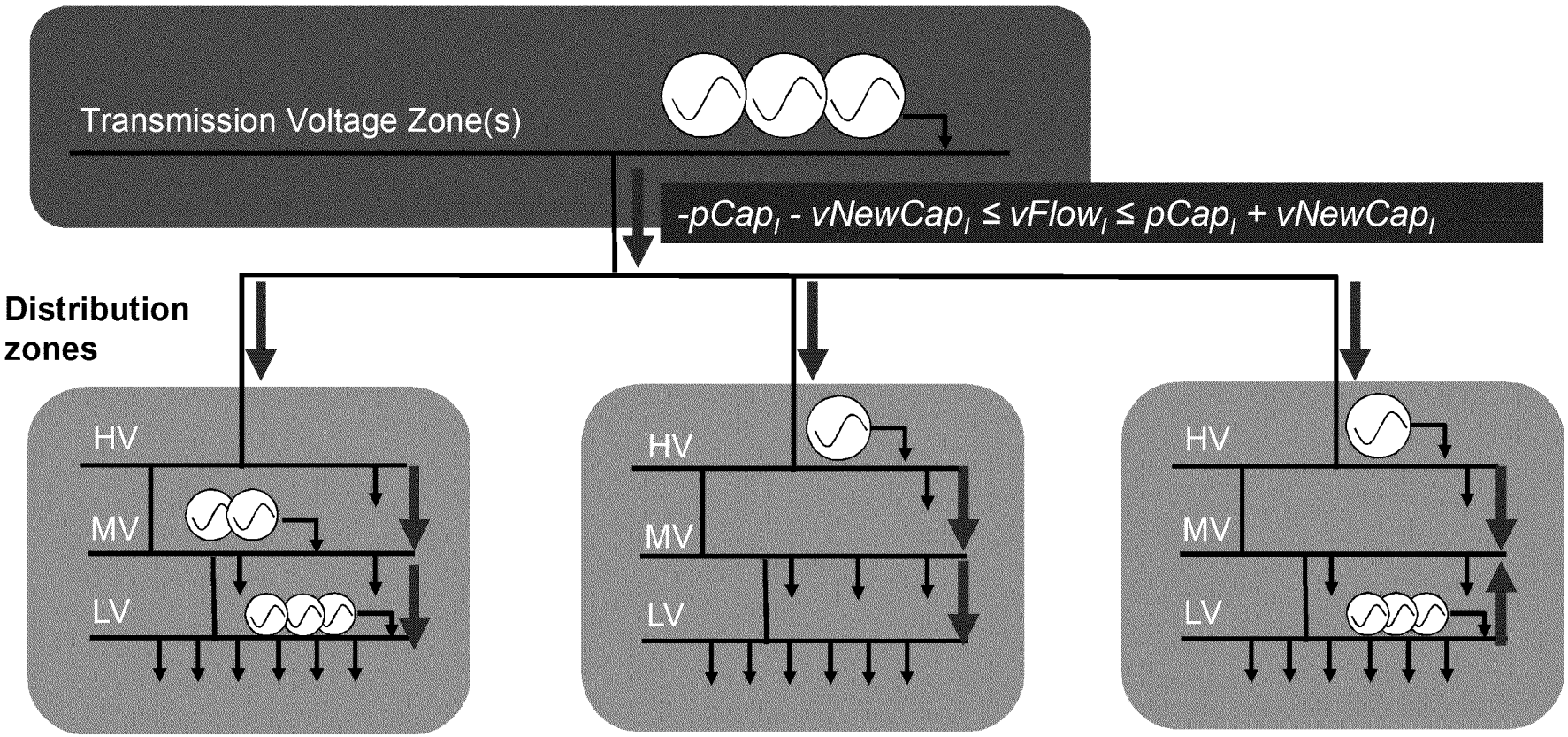
CAPTURING DERS AND ECONOMIES OF UNIT SCALE

Siting of resources possible at multiple locations and multiple scales (unit costs)



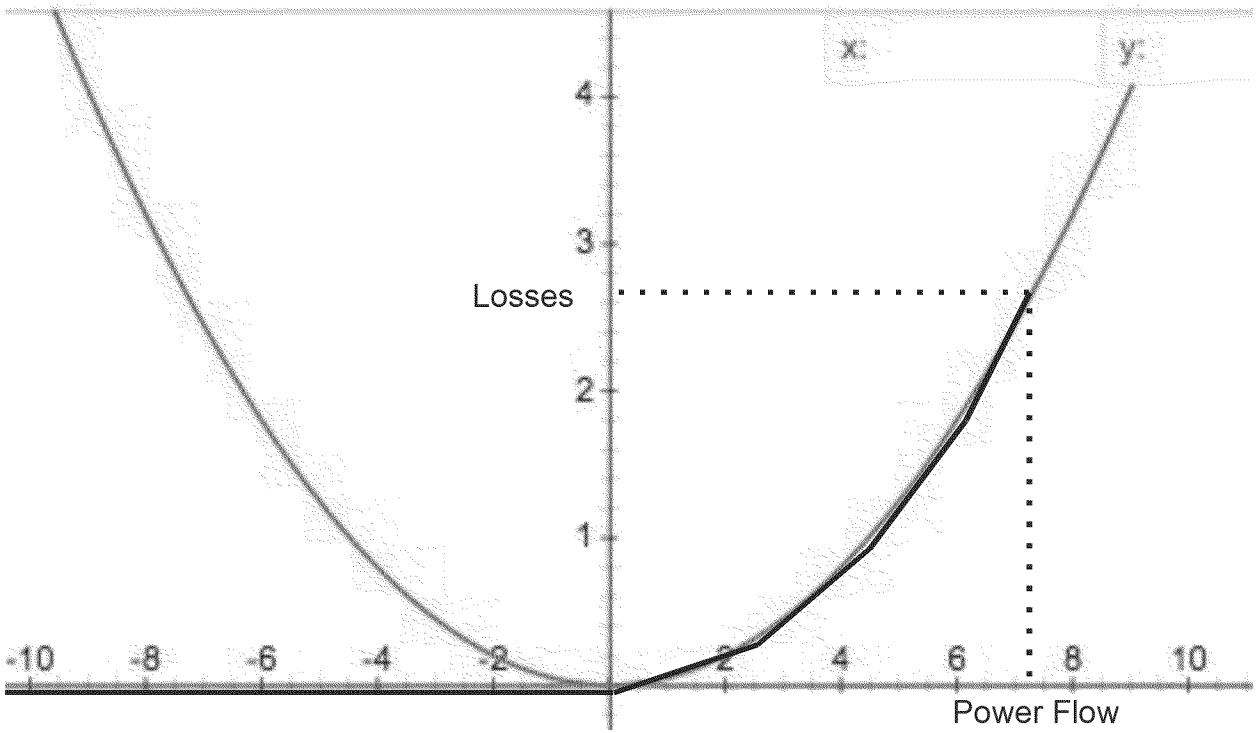
LOCATIONAL VALUE: TRANSMISSION CONGESTION/EXPANSION

Multizonal “pipeline” flow model w/constraints between zones & network expansion



LOCATIONAL VALUE: TRANSMISSION NETWORK LOSSES

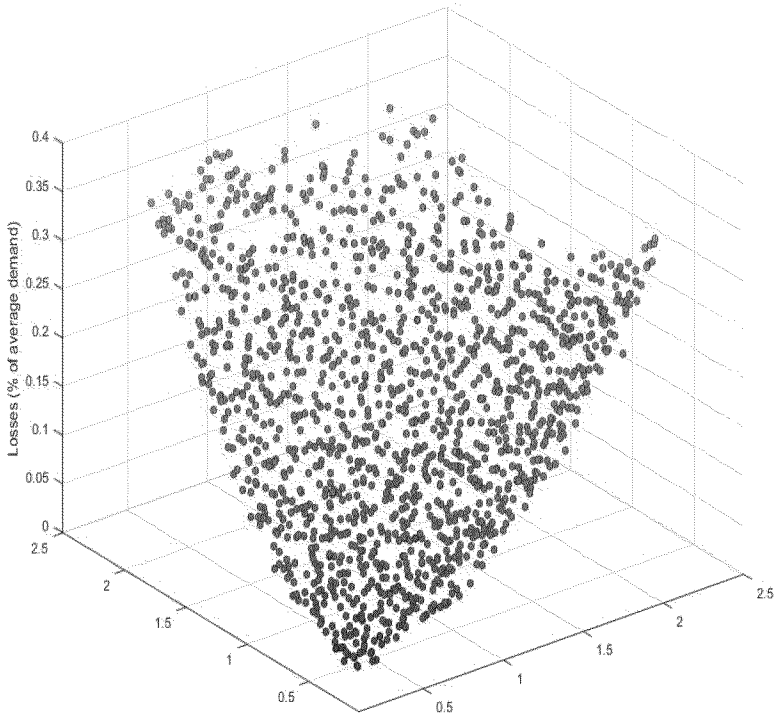
Transmission losses are segment-wise interpolation of losses as a quadratic function of power flows.
(Based on Zhang, Hu, & Song 2013 and Fitiwi et al., 2016)



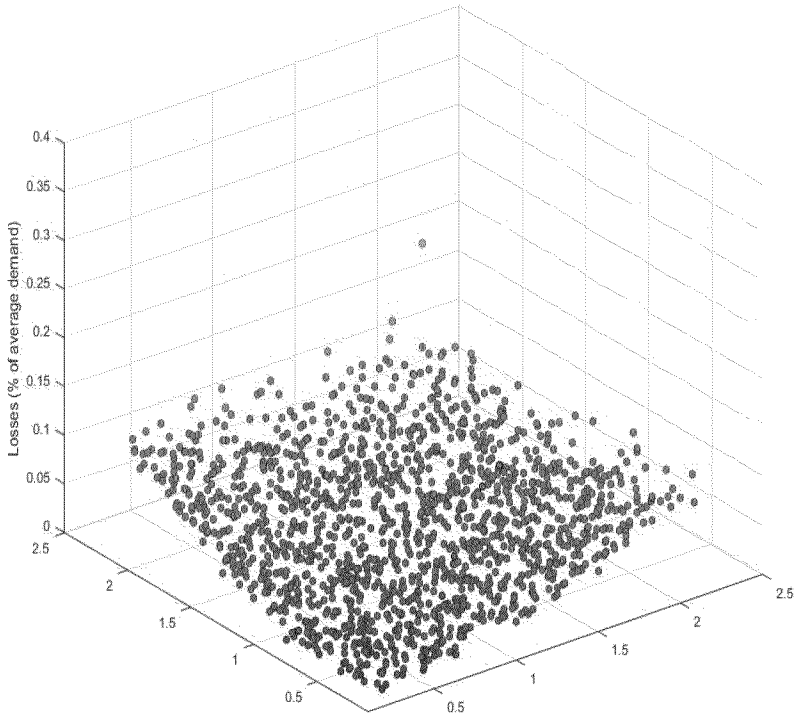
LOCATIONAL VALUE: DISTRIBUTION NETWORK LOSSES

Distribution losses as a function of injections and withdrawals within each voltage level: Semi-urban European network results

Variation in low voltage



Variation in medium voltage

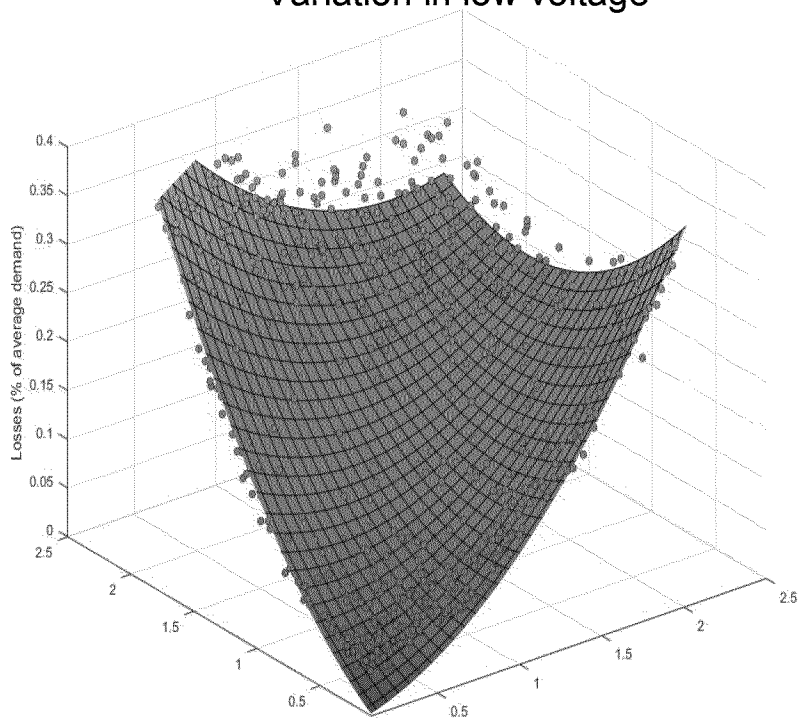


(Jenkins, Luke, & Vergara forthcoming)

LOCATIONAL VALUE: DISTRIBUTION NETWORK LOSSES

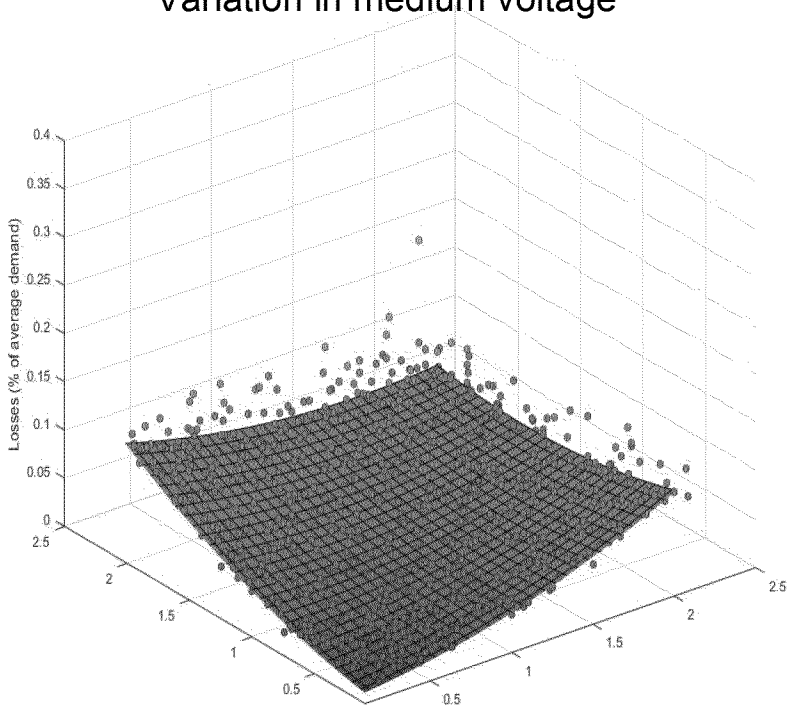
Distribution losses as a function of injections and withdrawals within each voltage level: Semi-urban European network results

Variation in low voltage



$$\text{losses} = -357.1 + 0.4 \times (\text{net withdrawals})^2 + 36.0 \times (\text{peak withdrawals}) + 16.2 \times (\text{peak injections})$$

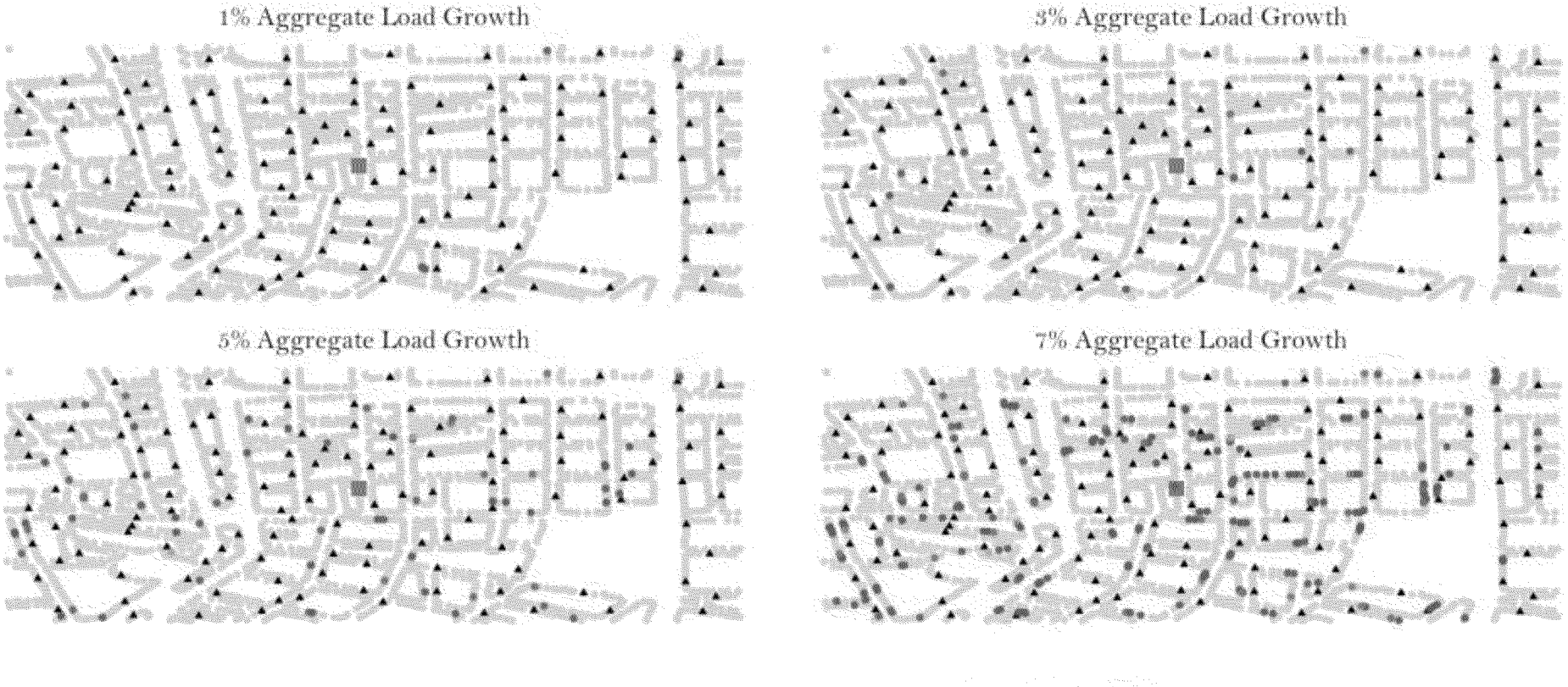
Variation in medium voltage



$$\text{losses} = 170.1 + 0.1 \times (\text{net withdrawals})^2 + 8.8 \times (\text{peak withdrawals}) + 6.1 \times (\text{peak injections})$$

LOCATIONAL VALUE: DISTRIBUTION NETWORK CAPACITY

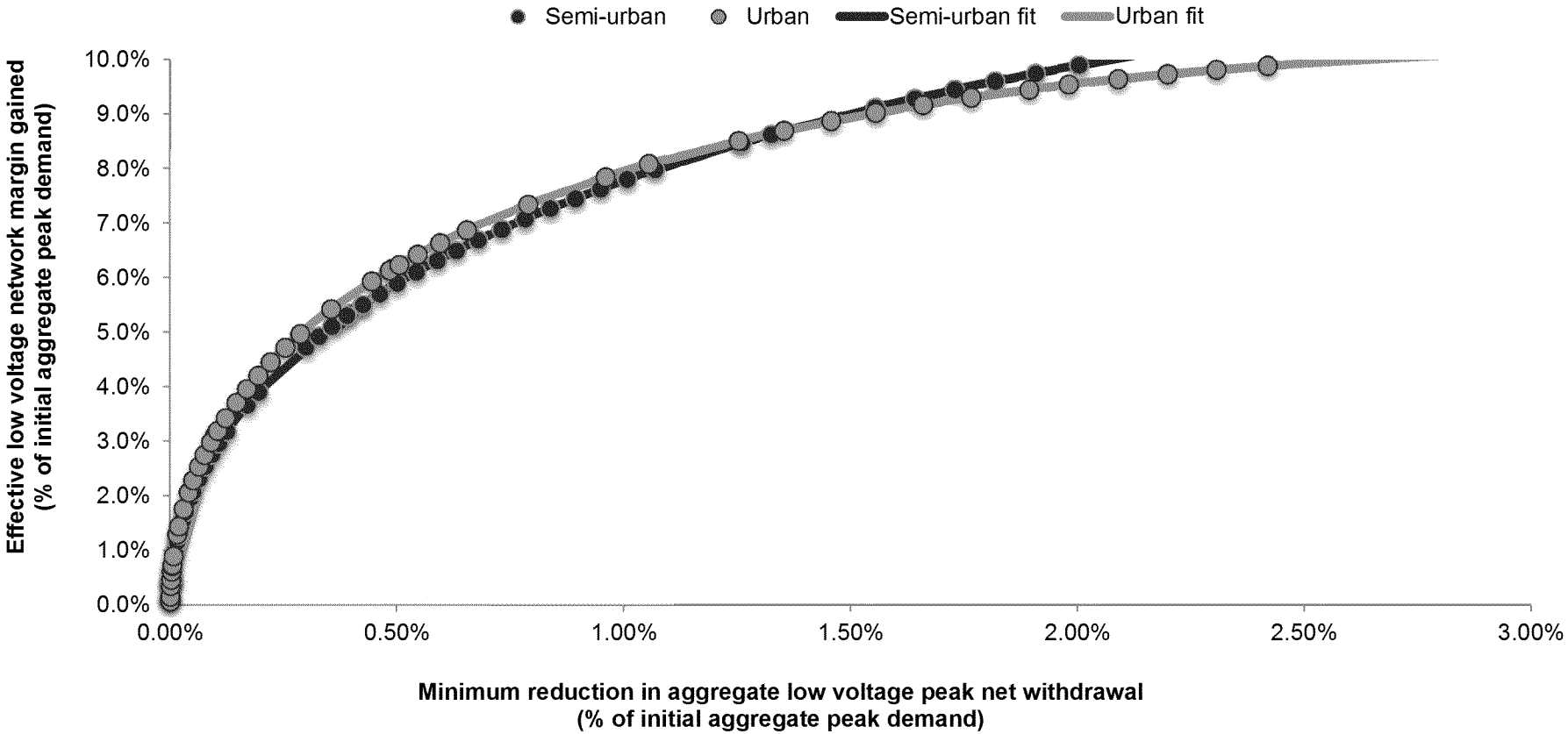
Distribution of load curtailment/self-generation necessary to accommodate load growth without network reinforcement – European urban network case



Source: Jenkins, Luke & Vargara, forthcoming

LOCATIONAL VALUE: DISTRIBUTION NETWORK CAPACITY

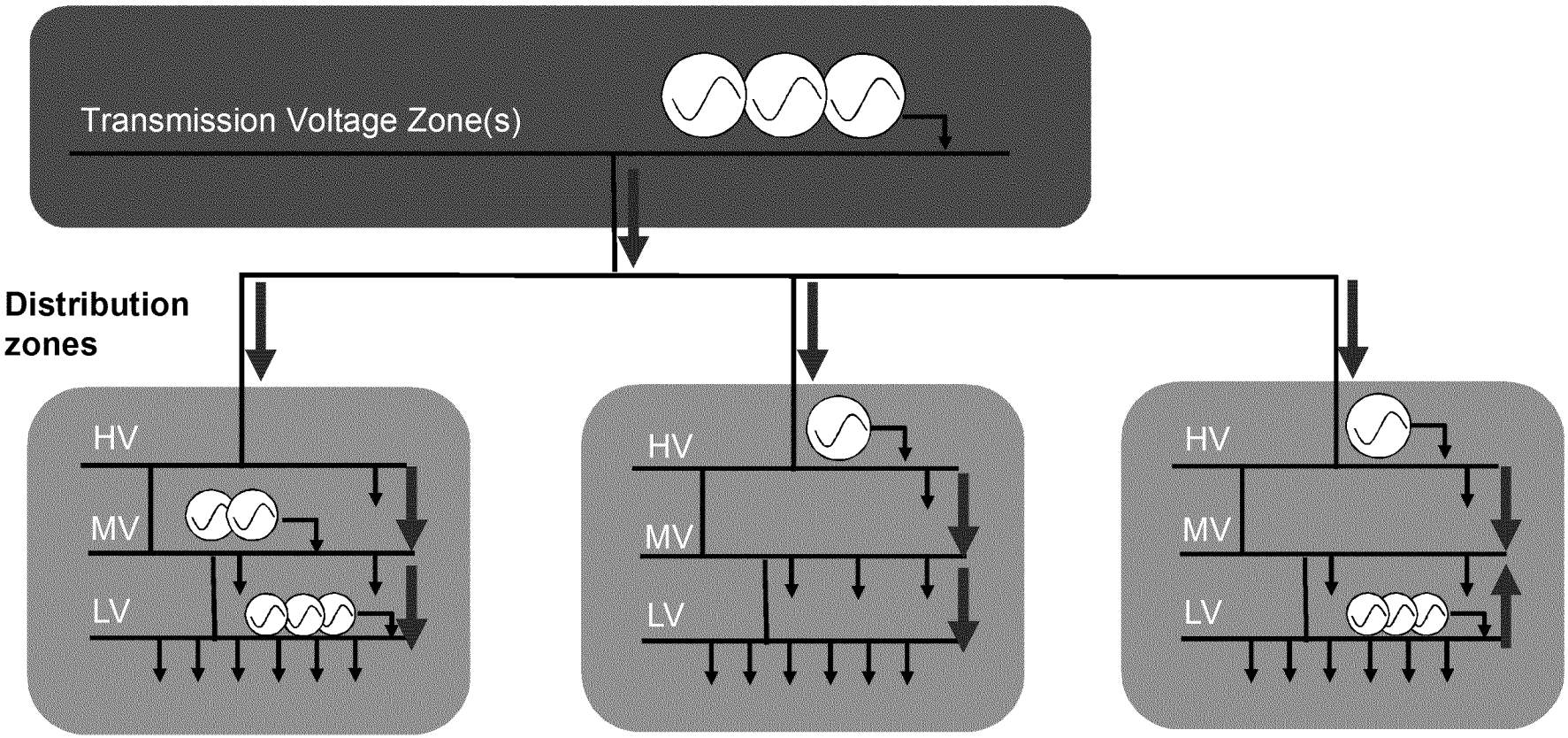
Potential for DERs to substitute for distribution network upgrades in representative European distribution networks - low voltage distribution example



See: Jenkins, Luke & Vergara forthcoming and Pérez-Arriaga et al. 2016. *The Utility of the Future: an MIT Energy Initiative response to an industry in transition*. Cambridge, MA: Massachusetts Institute of Technology. http://energy.mit.edu/research/utility-future-study/

A NEW MODEL FOR NEW OPPORTUNITIES & TRADEOFFS

GEN-X: a new electricity resource capacity expansion planning model that captures key tradeoffs between locational value and economies of unit scale

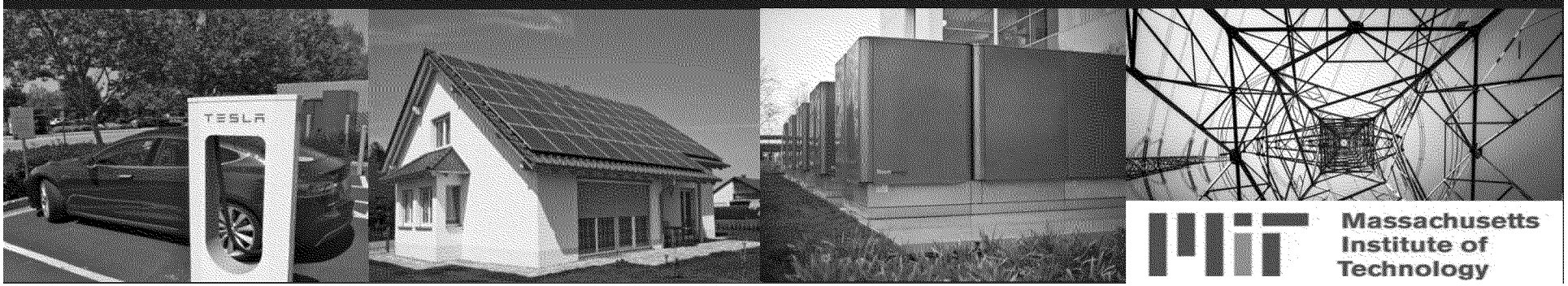


GEN-X APPLICATIONS

1. • Evaluate economically optimal portfolio of conventional and distributed energy resources to meet projected load growth and policy constraints, as well as implications for network reinforcements
2. • Analyze economics of distributed energy resources and understand how novel resources deliver value and affect operation of power systems
3. • Evaluate optimal scale of solar PV, energy storage devices, fuel cells, etc. (e.g. economies of scale vs. locational benefits tradeoffs)
4. • Evaluating and benchmarking policy and regulation
5. • Electricity utility integrated resource planning with distributed energy resources

Jesse D. Jenkins
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Research assistant, MIT Energy Initiative Electric Power Systems Center
Massachusetts Institute of Technology
jessedj@mit.edu | Linkedn.com/in/jessedjenkins

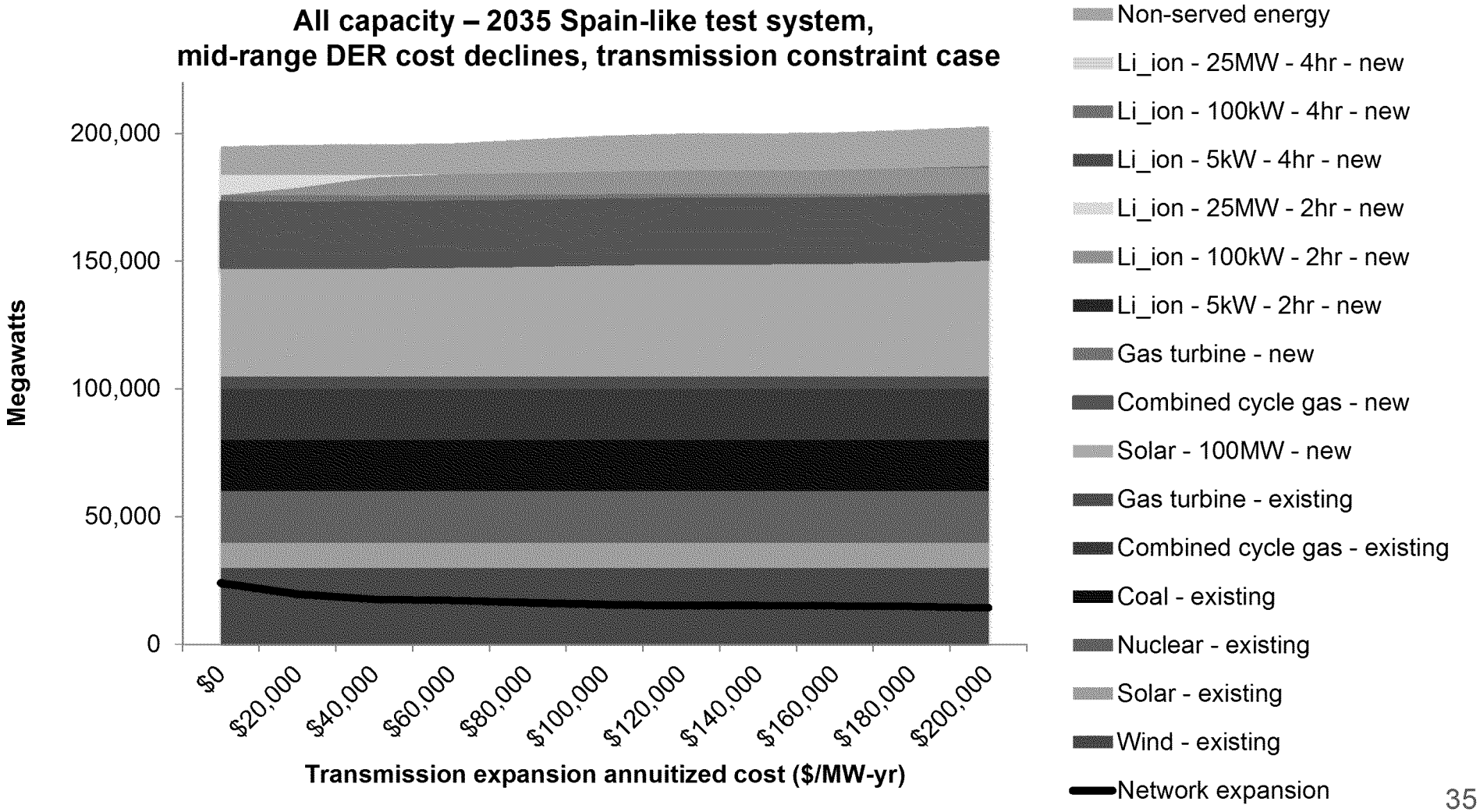
Questions



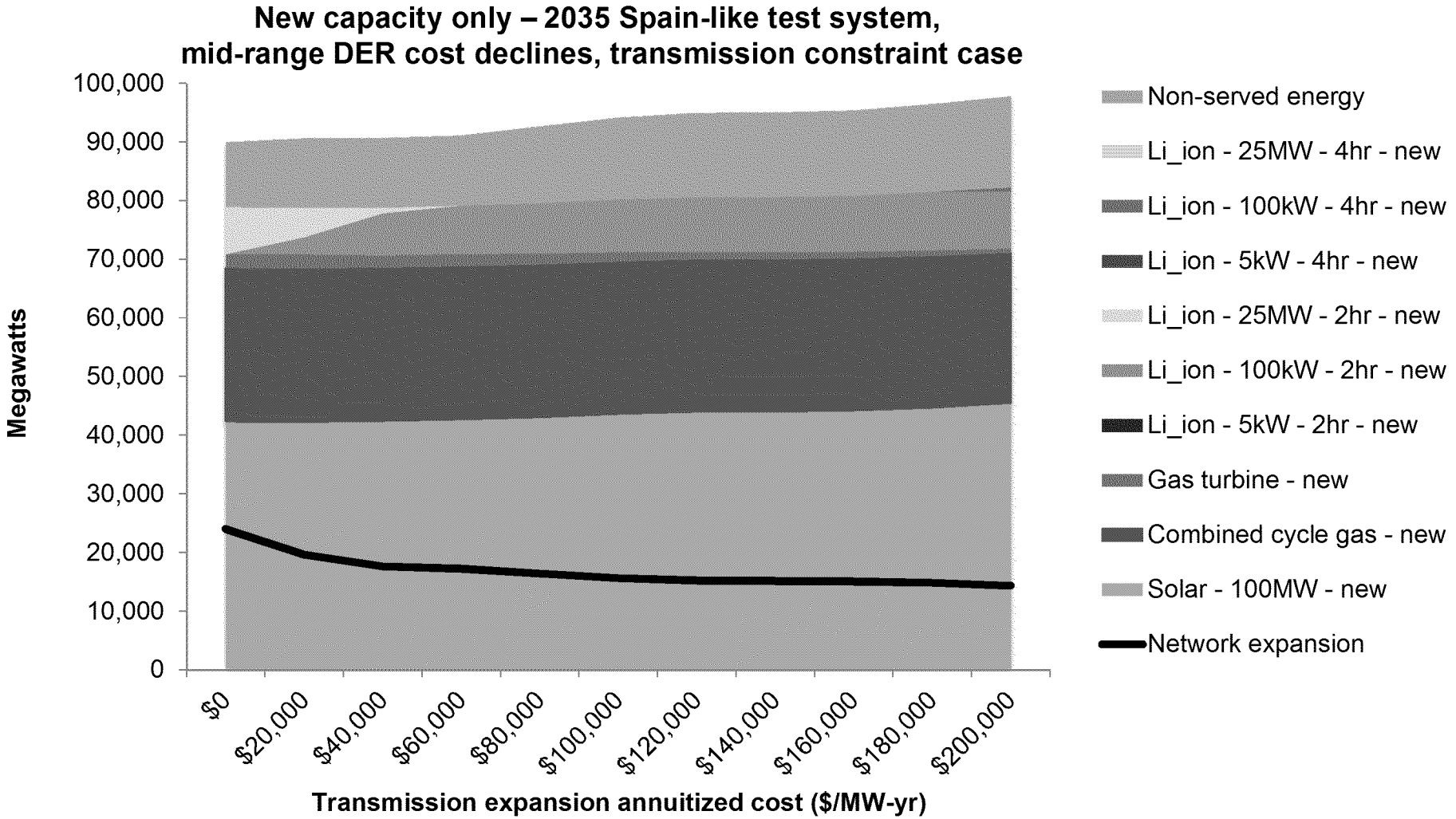
APPENDIX:

A CASE STUDY OF ENERGY STORAGE AND TRANMISSION DEFERRAL

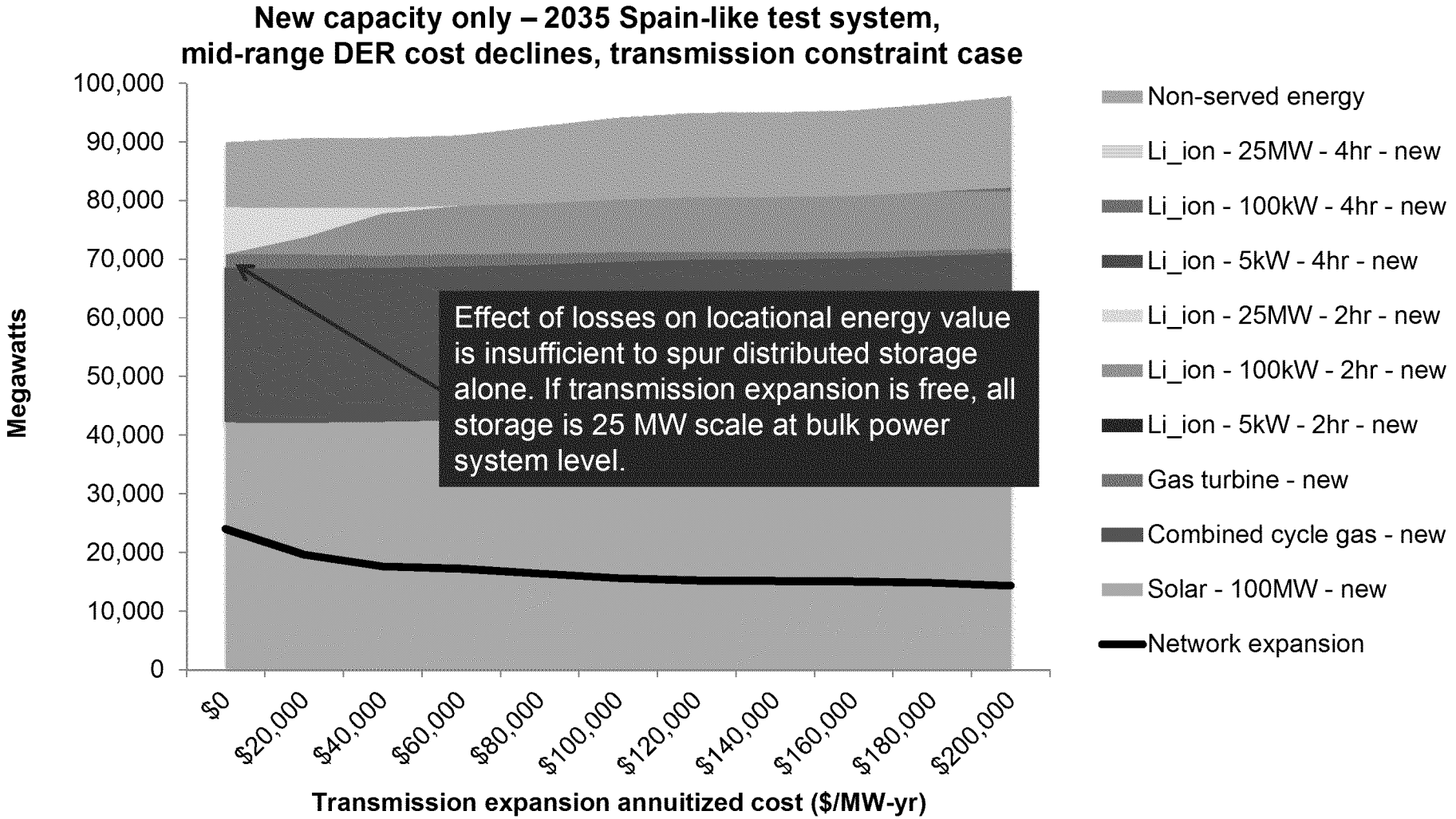
TRANSMISSION EXPANSION AND STORAGE CASE STUDY



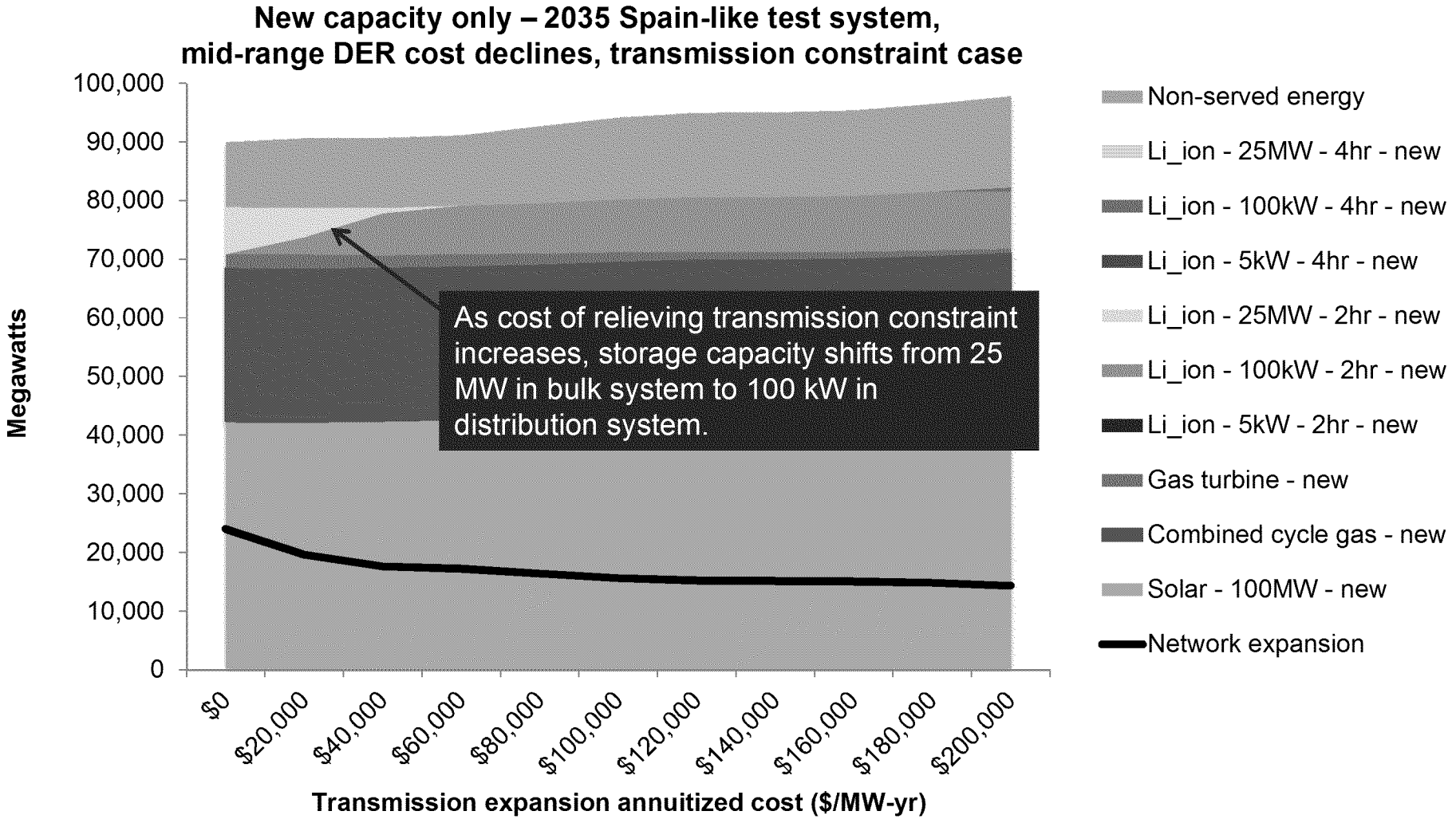
TRANSMISSION EXPANSION AND STORAGE CASE STUDY



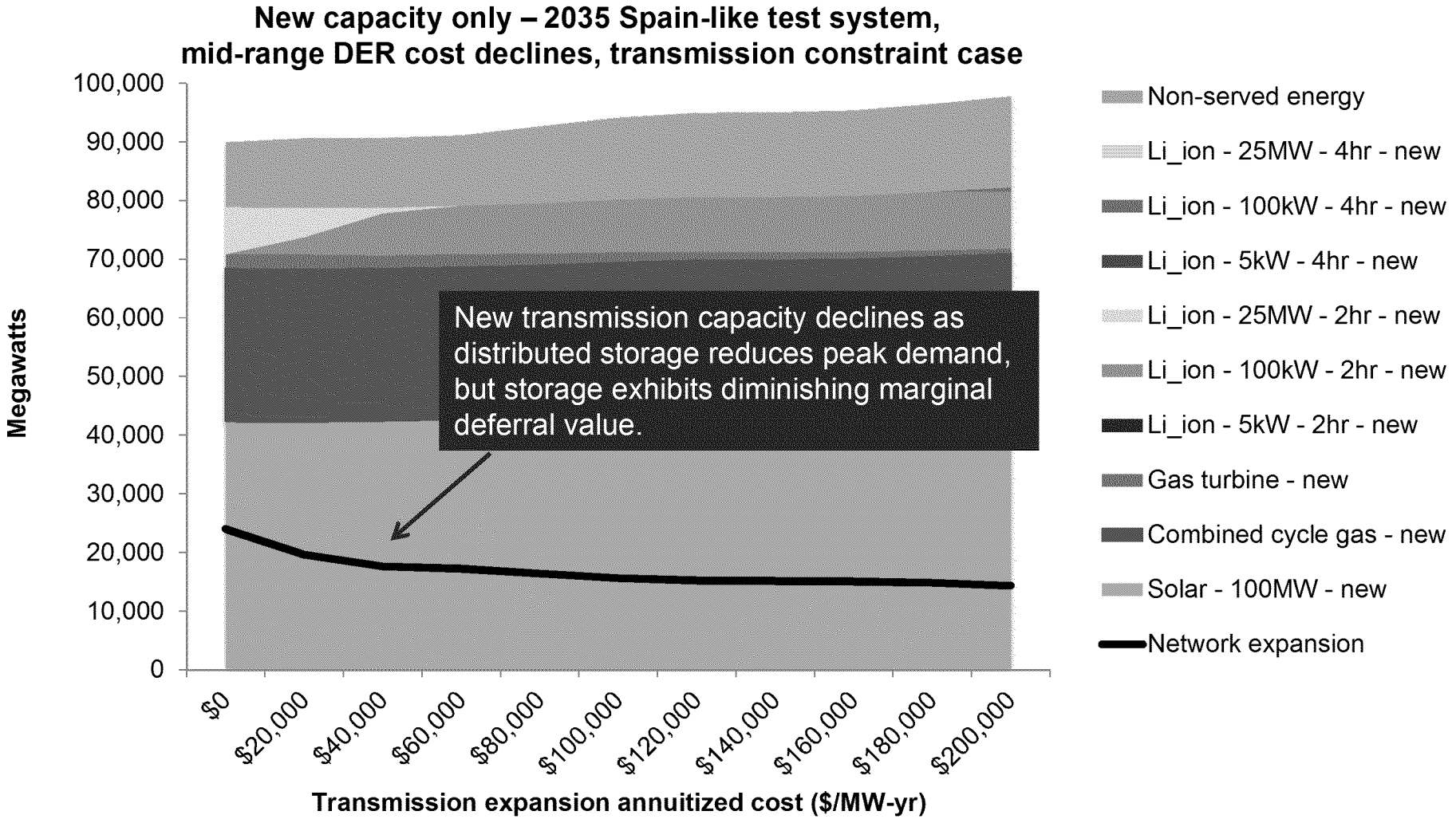
TRANSMISSION EXPANSION AND STORAGE CASE STUDY



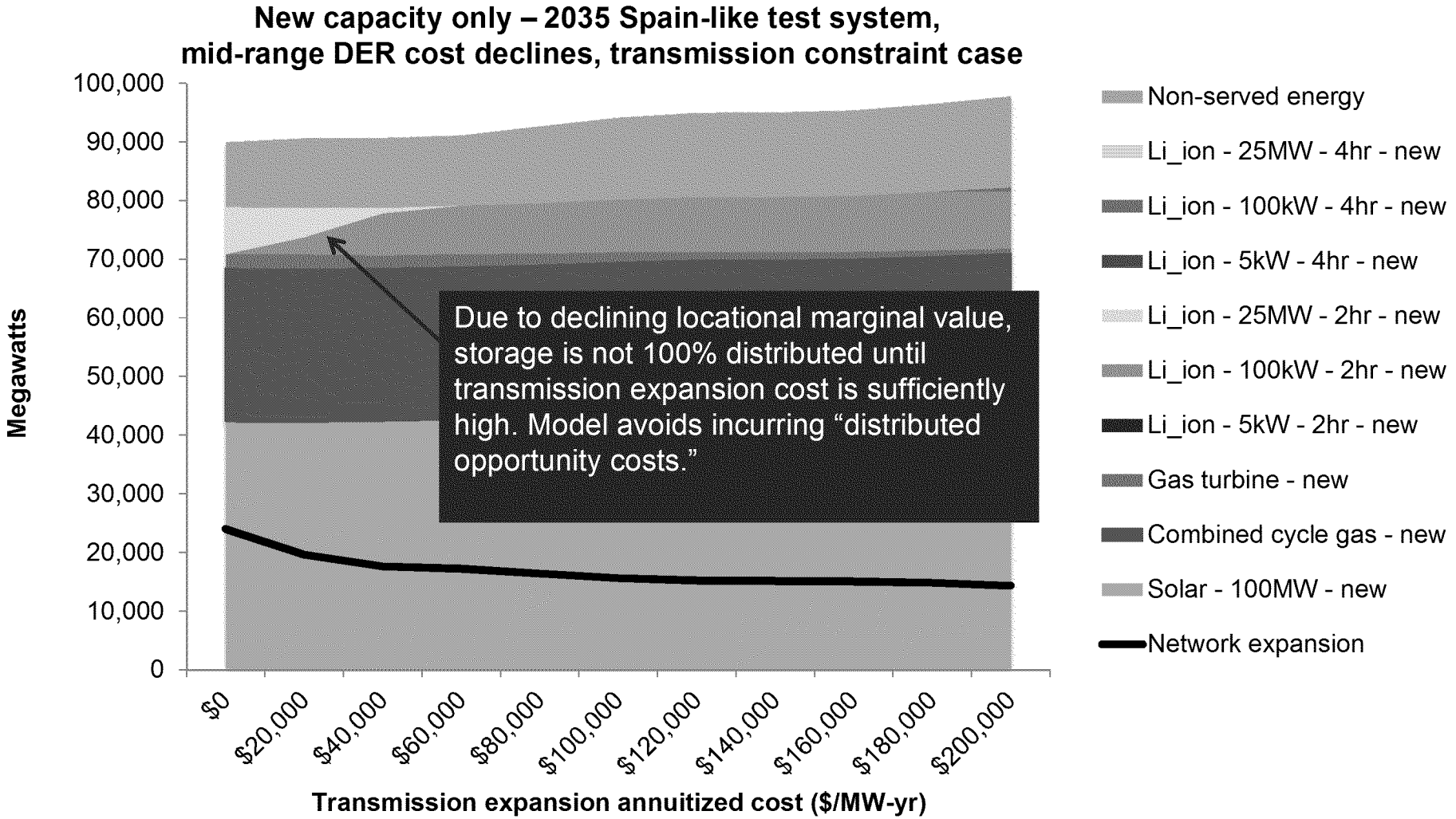
TRANSMISSION EXPANSION AND STORAGE CASE STUDY



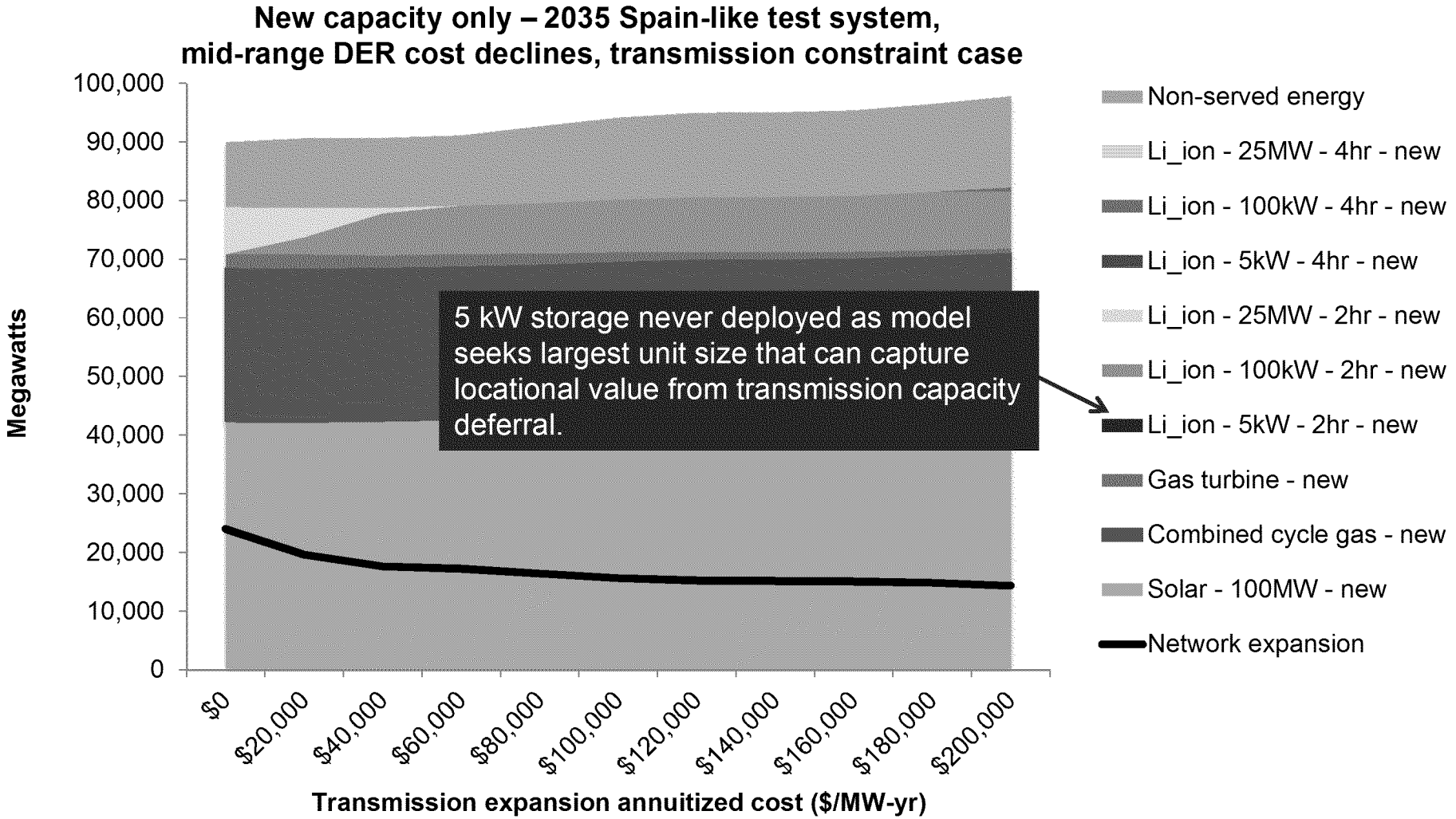
TRANSMISSION EXPANSION AND STORAGE CASE STUDY



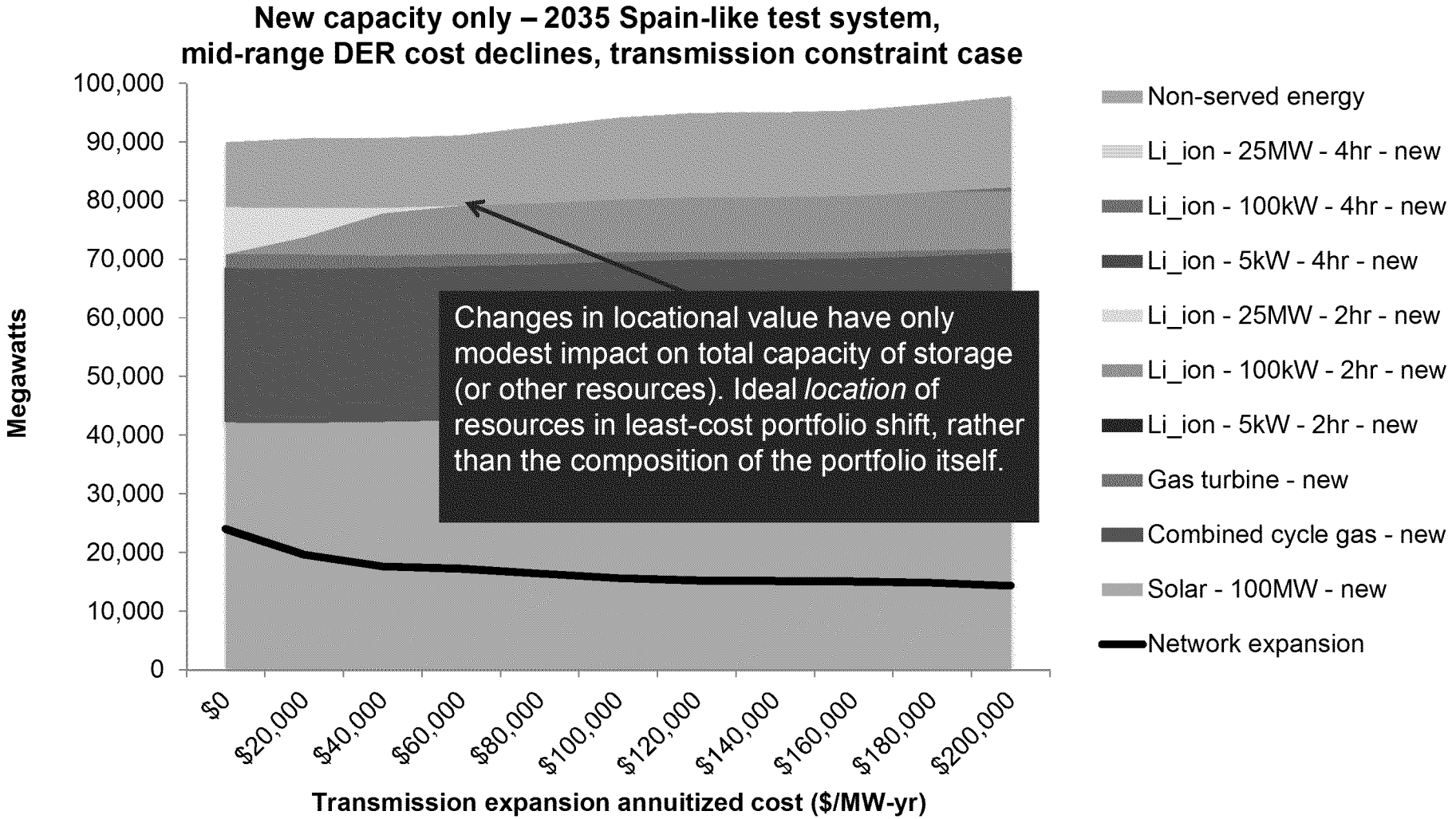
TRANSMISSION EXPANSION AND STORAGE CASE STUDY



TRANSMISSION EXPANSION AND STORAGE CASE STUDY



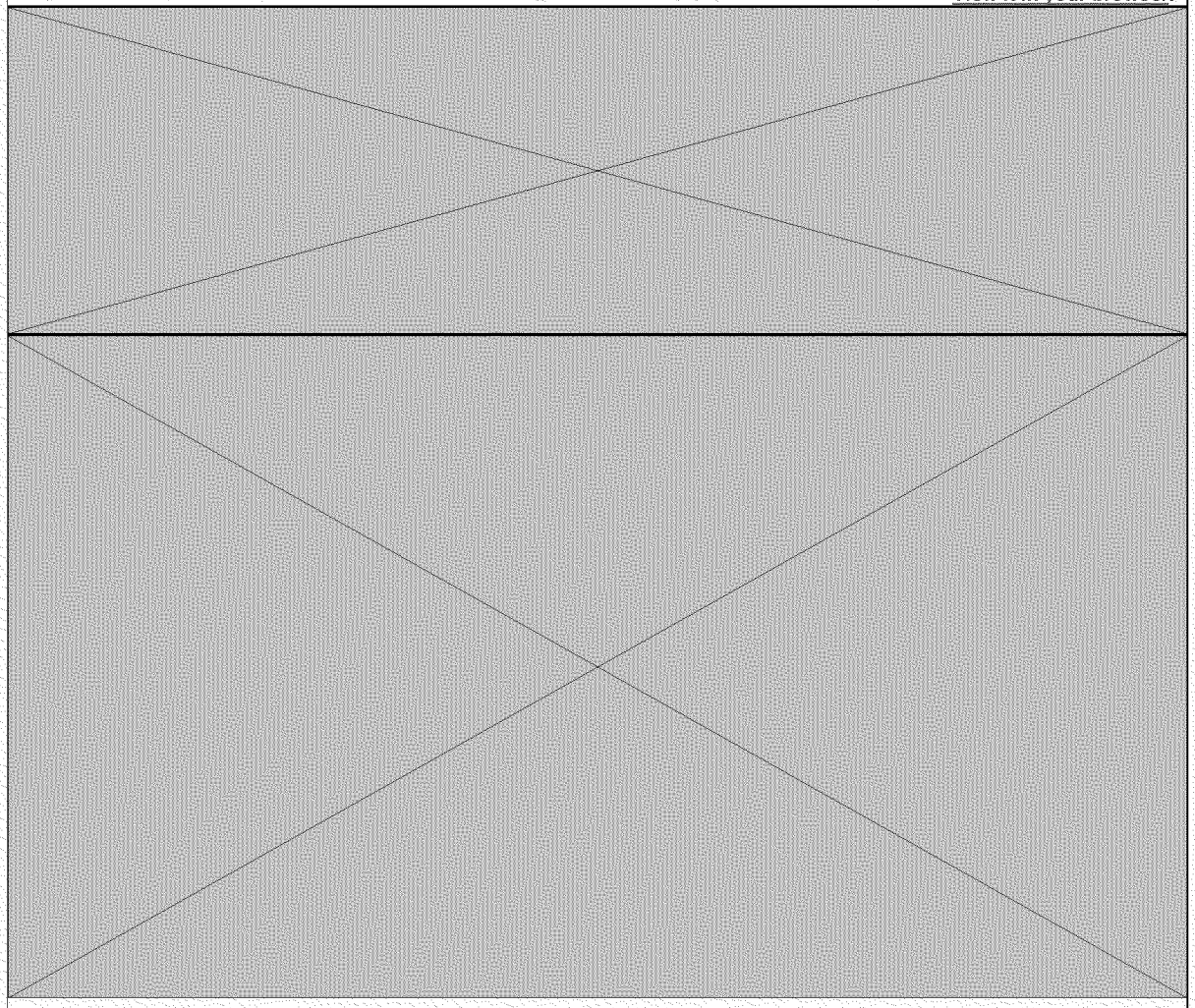
TRANSMISSION EXPANSION AND STORAGE CASE STUDY



To: Dravis, Samantha[dravis.samantha@epa.gov]
From: SMCI This Week
Sent: Fri 11/10/2017 8:00:52 PM
Subject: A: SMCI This Week | A special thanks to those who serve

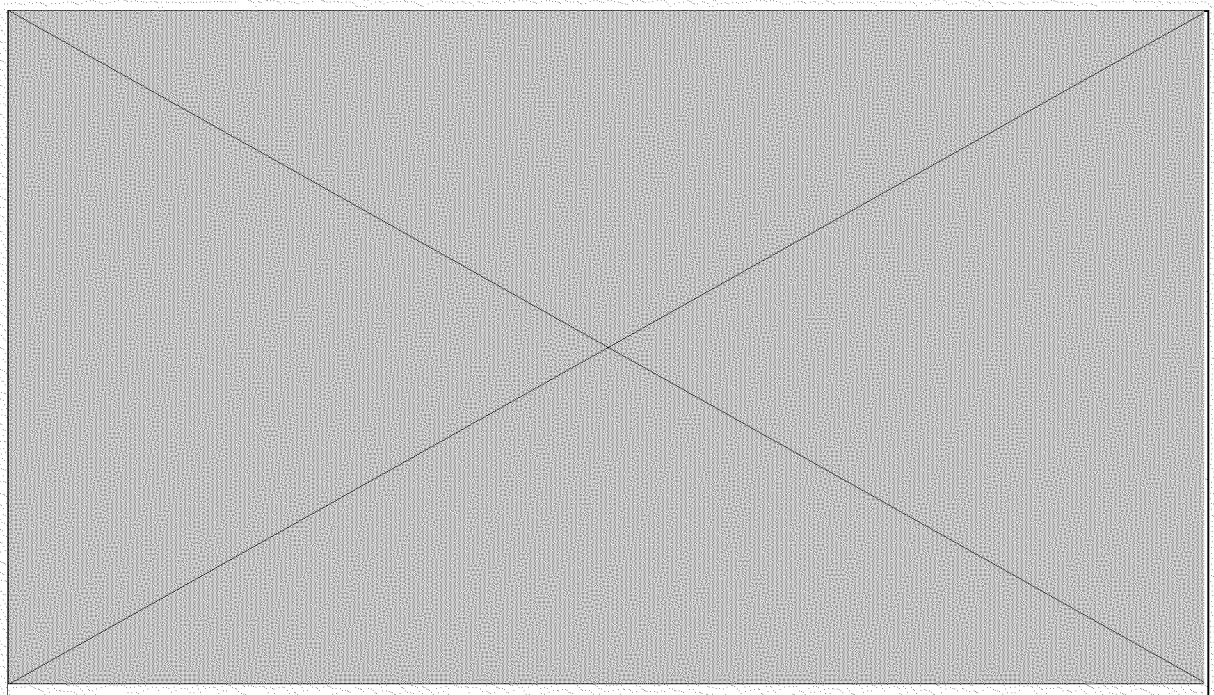
This special Veteran's Day weekly update for the ME/CFS community includes videos about Gulf War Illness, veterans with ME/CFS and a new face in the community.

Email not displaying correctly?
View it in your browser.



Discovery Forum Highlight: Gulf War Illness and ME/CFS with Dr. Nancy Klimas

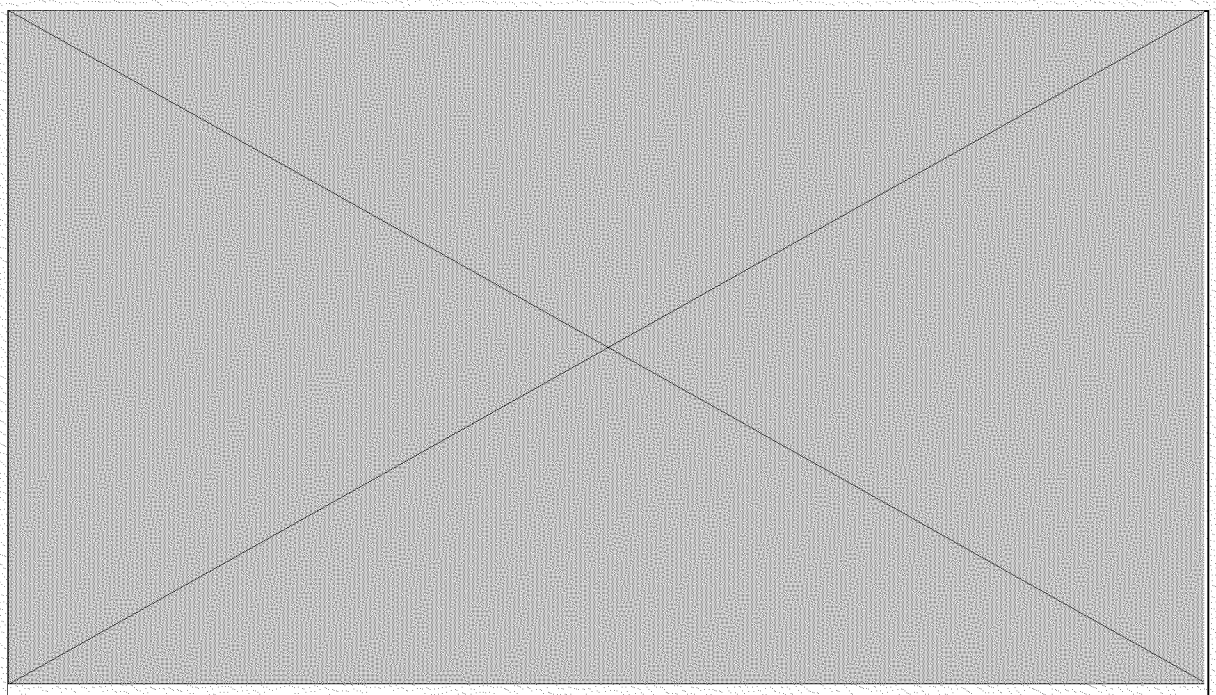
This week, in recognition of Veterans' Day we'd like to highlight the Discovery Forum presentation of Dr. Nancy Klimas of Nova Southeastern University. Dr. Klimas has more than 30 years of professional experience and has achieved international recognition for her research and clinical efforts in Myalgic Encephalomyeltis/chronic fatigue syndrome (ME/CFS) and Gulf War Illness (GWI). Up to 250,000 veterans suffer from GWI and, as Dr. Klimas presented, "clinically, there is no difference between ME/CFS patients and Gulf War Illness patients." Check out Dr. Klimas' presentation at last month's Discovery Forum **here**.



Dr. Zaher Nahle talks research funding with NINDS Director, Dr. Walter Koroshetz

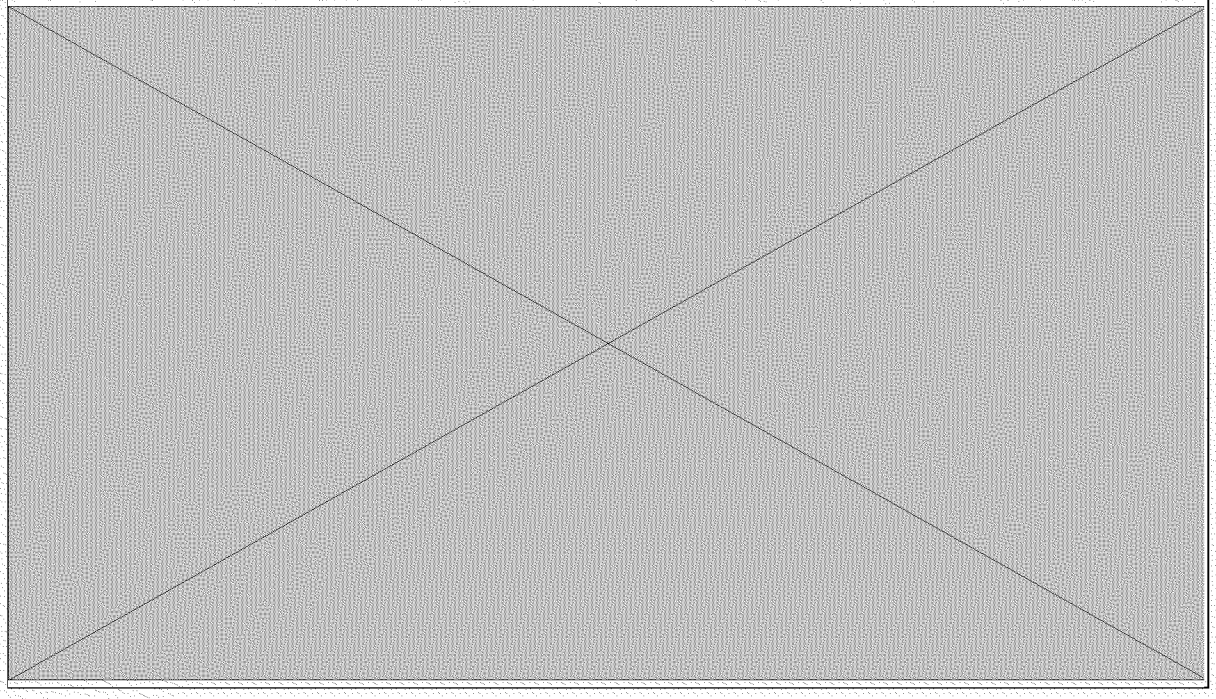
Our Chief Scientific Officer/Vice President of Research Dr. Zaher Nahle sat down recently with the Director of the National Institute of Neurological Disorders (NINDS) Dr. Walter Koroshetz on the nationally televised program "the White House Chronicle" with host Llewellyn King. Drs. Nahle and Koroshetz discussed current research and funding for ME/CFS, including the recent NIH-funded ME/CFS consortia projects.

This episode is the second episode of White House Chronicle featuring SMCI. If you missed the episode featuring SMCI President Carol Head, watch it here: http://go.solvecfs.org/e/192652/crsvhMeC11U/7qxrz/49087783



Welcome, Sarah!

We are excited to welcome Sarah Jones as our new Communications and Engagement Coordinator. Sarah has over five years' experience working in communications for Military and Veteran agencies. She worked for the Arkansas National Guard Public Affairs Office before becoming the Public Affairs Director for the Arkansas Department of Veterans Affairs. Sarah received her BA and MFA in Digital Filmmaking from the University of Central Arkansas. She has written and directed several short films that have screened in festivals all across the country.



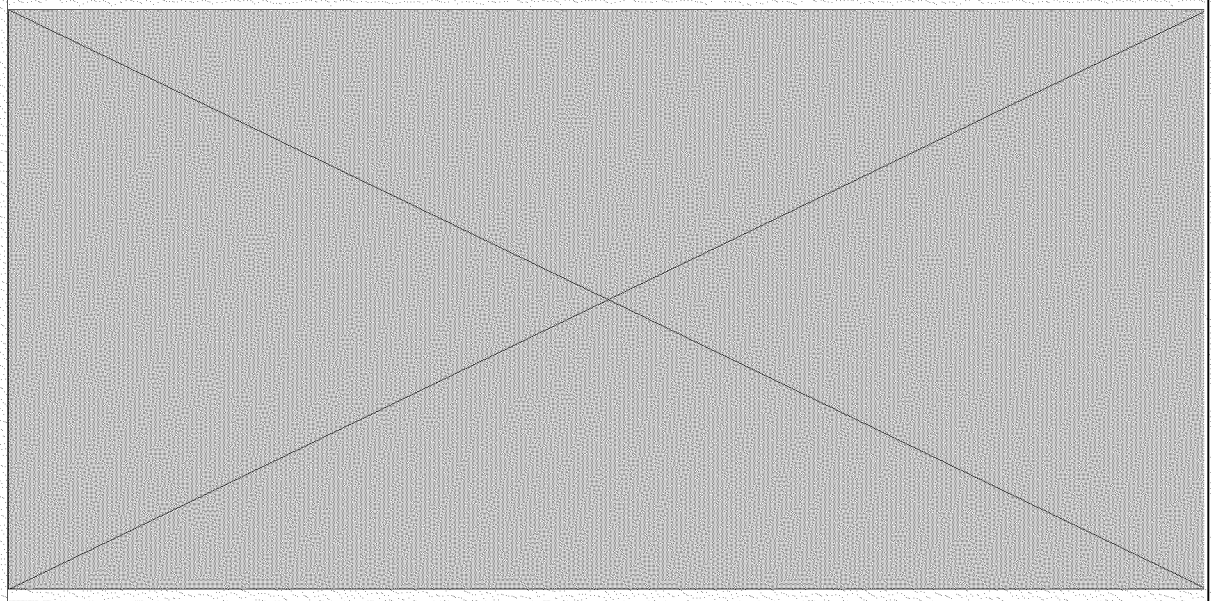
Humans of ME/CFS Veteran: Tom Walsh

My initial symptoms (flu-like) started in 1995. I relapsed twice. It was all downhill from there. Over the next year and a half, food that I normally ate began to make me sick (debilitating stomach pain and body aches) to the point where the only thing that wouldn't make me sick was plain brown rice. It was also beginning to affect me at work. Stamina and short-term memory were decreasing.

In 2008, due to this illness, I lost my job and health coverage after 20 years. Fortunately, I'm a Veteran and started going to the VA. Turned out that my doctor has CFS. I got diagnosed in 2009 and got disability in 2010. Over the next few years, most of my family and my friends stopped communicating. I learned that when people are faced with a friend's illness, a lot of them fall off the grid. Instead of empathizing, they become uncomfortable and act like they don't even know you. That part is tough. Eventually, you get over it, as I have.

Fortunately, I'm an artist, and I've been relatively happy. I've got a website of my artwork: morecontrast.net.

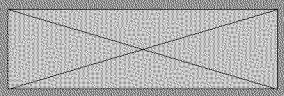
Each week we feature stories of members of our community in Humans of ME/CFS. To read more stories or submit your own visit: www.homecfs.solvecfs.org



Thank you to those who serve

From everyone at Solve ME/CFS Initiative (SMCI), we wish you a Happy Veterans Day and Happy Remembrance Day. Together, we recognize the dedication and sacrifice of the men and women who serve in uniform. Our hearts and thoughts are especially with the thousands of veterans who suffer with Gulf War Illness, which is so closely related to myalgic encephalomyelitis/chronic fatigue syndrome.

The work of SMCI is entirely fueled by gifts large and small from people just like you.



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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Chase Moses
Sent: Wed 11/1/2017 10:47:14 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Chase Moses
7769 W 118th St N
Sperry, OK 74073

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: virtualizationwebinars
Sent: Fri 11/10/2017 3:19:36 PM
Subject: Free CISSP Exam Prep - 100k security job openings

Want to pass the CISSP exam the first time and fast-track your cybersecurity career? There were over 102,000 job openings requiring a CISSP certification in 2016 and the demand is projected by 18% annually.

MCI is offering a free, online CISSP Exam Prep Course for new students enrolled in the Baker College Online Cloud Security Risk Management MBA or MSIS program.

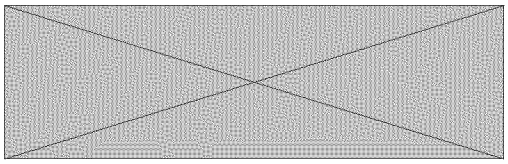
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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: American Law Institute CLE
Sent: Fri 11/10/2017 2:21:21 PM
Subject: Where You Go for CLE Matters—Hundreds of On-Demand Courses

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: efren hernandez
Sent: Mon 11/13/2017 6:57:46 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

efren hernandez
3110 n. 3rd street
lovington, NM 88260

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Steve Fitzpatrick
Sent: Wed 11/1/2017 5:51:21 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Steve Fitzpatrick
1247 Alysa way
Cheyenne, WY 82009

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Kane Hittle
Sent: Fri 11/10/2017 2:14:18 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Kane Hittle
324 Dominion Place
Heath, TX 75032

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Michael Welch
Sent: Mon 11/13/2017 6:56:41 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Thank you.

Michael Welch
308 Astilbe Ct.
Bear, DE 19701

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Robert OBrien
Sent: Wed 11/1/2017 12:19:27 AM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Robert OBrien
806 W. Monterrey Way
Artesia, NM 88210

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Parrish Miller
Sent: Tue 10/31/2017 10:59:36 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Parrish Miller
804 W Monterrey Way
Artesia, NM 88210

From: Susan Flanagan
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Tentative: Meeting with the Agricultural Retailers Association: General Duty Clause [CAA Section 112(r)(1)]
Start Date/Time: Fri 12/8/2017 7:00:00 PM
End Date/Time: Fri 12/8/2017 7:30:00 PM

;

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Chris Smith
Sent: Tue 10/31/2017 8:41:39 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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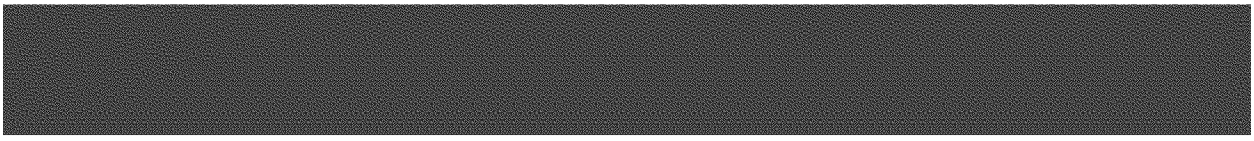
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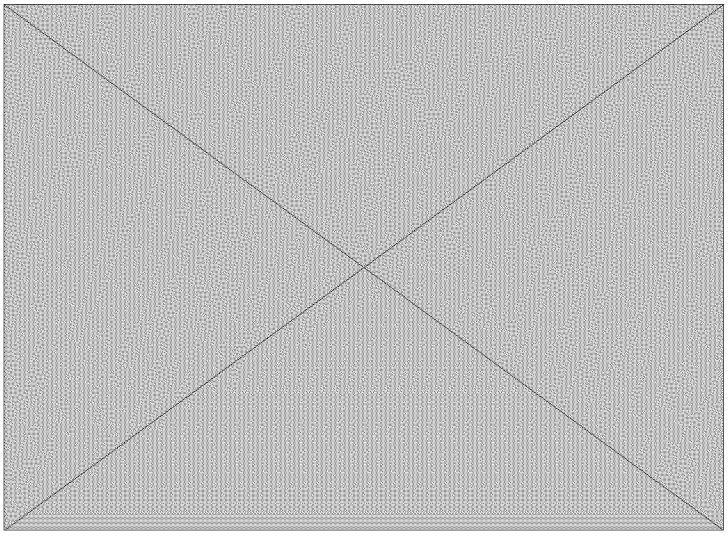
Chris Smith
1330 W 375 N Apt F207
Centerville, UT 84014

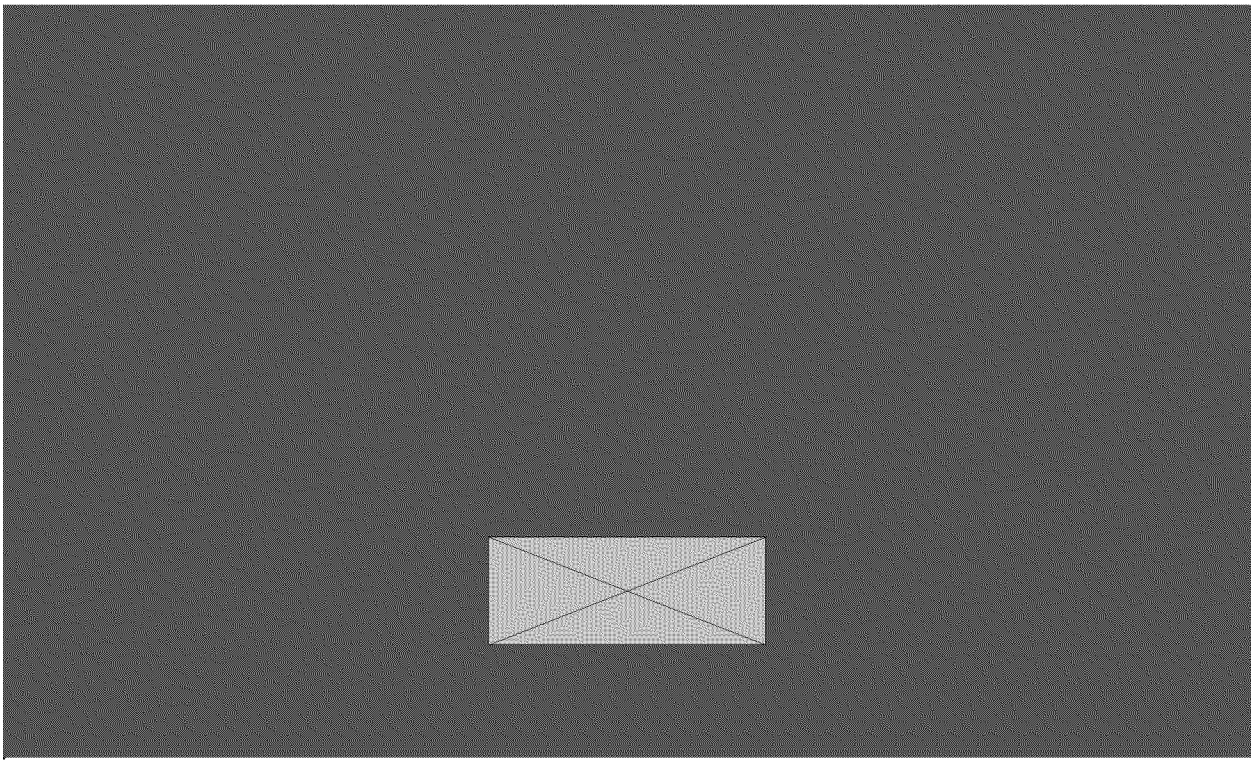
To: Dravis, Samantha[dravis.samantha@epa.gov]
From: ECOS
Sent: Thur 11/9/2017 7:31:11 PM
Subject: ECOS Elects New Vice Chairs, Butler Speaks on the Hill, Senate Confirms Wehrum for Top Air Post, & More











To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Natalie Dunn
Sent: Tue 10/31/2017 8:41:39 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Natalie Dunn
300 Morrie Ave
Cheyenne, WY 82007

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Sara Starr
Sent: Tue 10/31/2017 8:41:38 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Sara Starr
3010 State Street
Dallas, TX 75204

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Lorraine Martinez
Sent: Tue 10/31/2017 8:41:37 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Lorraine Martinez
300 Morrie Ave
Cheyenne, WY 82007

To: Dravis, Samantha[dravis.samantha@epa.gov]; samantha.dravis@gmail.com[samantha.dravis@gmail.com]
From: Liz Roche
Sent: Tue 10/31/2017 7:31:32 PM
Subject: Invitation: Energy & Tax Reform Dinner & Discussion | Thursday, Nov. 16

Hi Samantha-

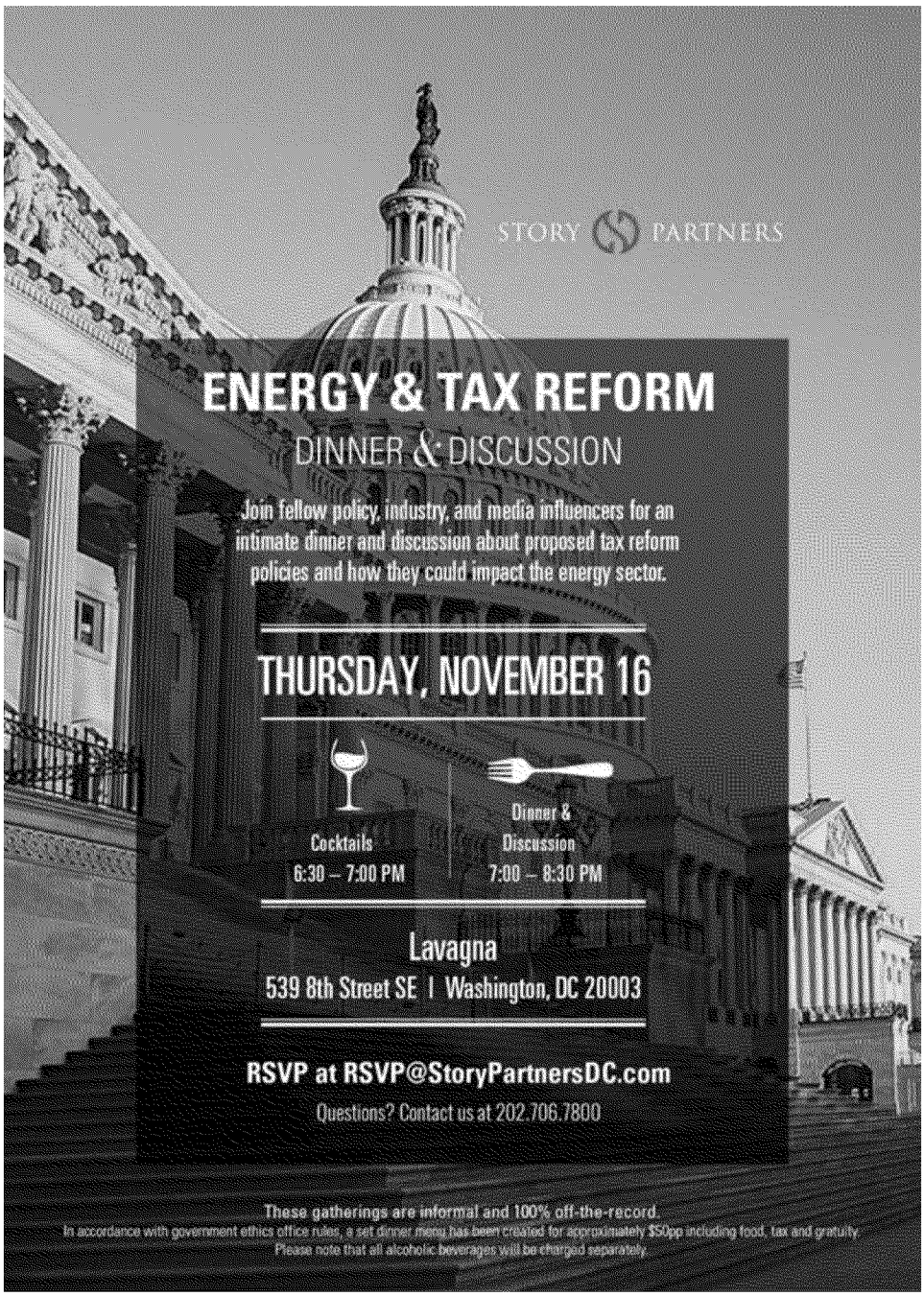
Hope you're doing well. I wanted to reach out and invite you to the next energy dinner and discussion on **Thursday, November 16 from 6:30-8:30 p.m.** The dinner will bring together Hill, industry and media influencers to discuss **the impact proposed tax reform policies could have on the energy industry.**

As a reminder, this seated dinner is 100 percent off-the-record and serves as a catalyst for future discussions—connecting the right people to move our energy policy forward. We've also worked with Lavagna to offer a family-style menu so that each person's bill will not exceed $50. Please note that this includes food, tax and tip, but not alcoholic drinks.

For your convenience, below is the invite with additional details about the time and location.

Best,

Liz



Liz Roche

Assistant Vice President

Story Partners, LLC

The Flour Mill Building
1000 Potomac Street, NW

Suite 102
Washington, DC 20007

Liz.roche@storypartnersdc.com

O: 202 706-7816 **C**: 256-466-5285

@StoryPartners

From: Allen, Tania
Location: WJC East 1153 (HQ) or EPAtv
Importance: Normal
Subject: Veterans Day Commemoration Program
Start Date/Time: Wed 11/8/2017 3:30:00 PM
End Date/Time: Wed 11/8/2017 4:30:00 PM
Allen EPA Bio 2017-Final.docx
veterans_day2017-18x46-Final.pdf

Please join us on **November 8th from 10:30 am -11:30 am (EST)** for the EPA 2017 Veterans Day Commemoration Program. We will hear from EPA's own Colonel (Retired) Reginald Allen, Director of Administrative and Executive Services in the Office of the Administrator. He was the first African-American commander of a United States Cavalry regiment in the history of the United States Army, the second African-American to command a squadron of the historic Buffalo Soldiers and led the Armored combat force in the operation that captured Saddam Hussein.

We are also seeking **your pictures** to be included in the PowerPoint slideshow! Please send your military picture to eng.connie@epa.gov by **October 31st** to be included in the presentation.

We are looking forward to this program and hope that you will be able to join us in person or through EPAtv. Please remember that EPAtv is available at http://epatv.epa.gov using only Internet Explorer while on the EPA network and cannot be accessed remotely. Phone lines are not available for this event, but the video recording will also be available for employees who are unable to participate live. People needing reasonable accommodations should contact Kristin P. Tropp at (202)559-0006.

For any additional questions pertaining to the Veterans Employment Program please contact Dr. Lester Facey, facey.lester@epa.gov, 202-566-1321.

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: David Reitz
Sent: Tue 10/31/2017 7:31:36 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

David Reitz
2621 Nova Park Ct
Rockwall, TX 75087

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Jared Boatman
Sent: Tue 10/31/2017 7:09:39 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Jared Boatman
117 W BLEVINS RD
ARTESIA, NM 88210

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Chris Atkinson
Sent: Tue 10/31/2017 7:04:54 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

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Thank you.

Chris Atkinson
652 weatherby dr
Cheyenne, WY 82007

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Alan Henman
Sent: Tue 10/31/2017 6:55:23 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

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Thank you.

Alan Henman
5200 S.W. 70th
El Dorado, KS 67042

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Strecker Jeff
Sent: Tue 10/31/2017 6:42:50 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

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Thank you.

Strecker Jeff
1506 N. Terhune
Wichita, KS 67230

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Eric Sanders
Sent: Tue 10/31/2017 6:11:38 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

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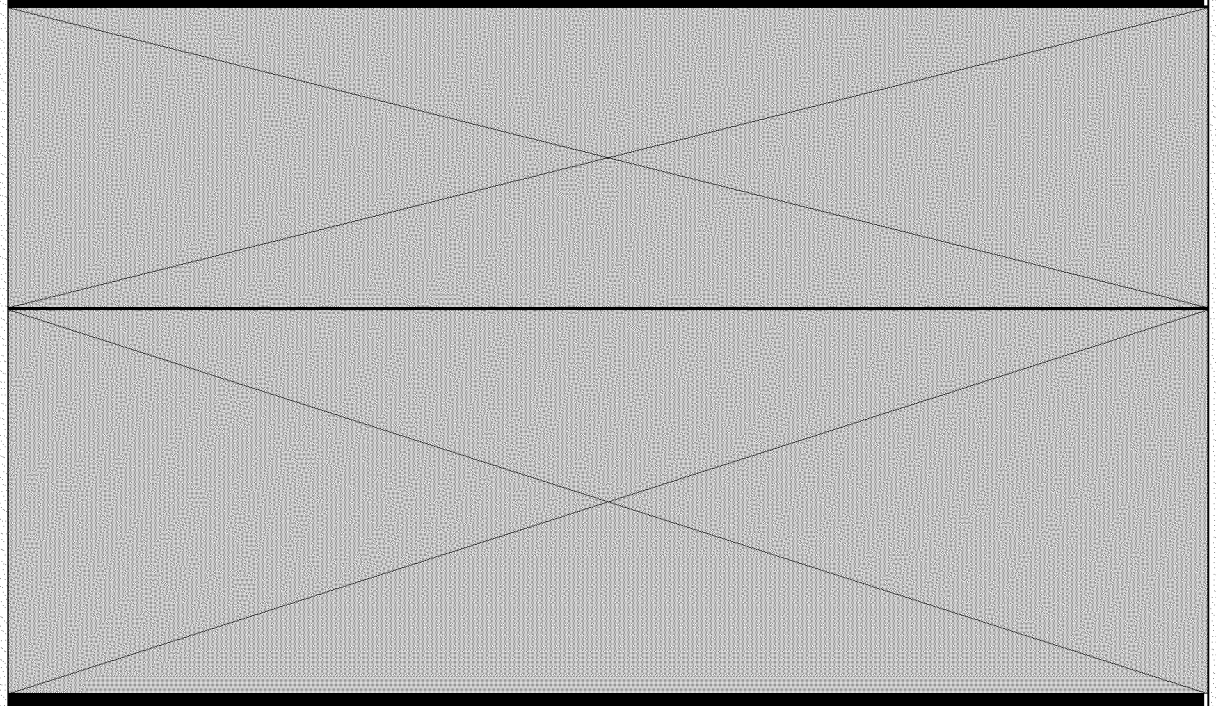
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Thank you.

Eric Sanders
Rural Route 2 Box 257
Nowata, OK 74048

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Solve ME/CFS Initiative
Sent: Tue 10/31/2017 5:44:42 PM
Subject: News Alert | SMCI Funds 5 new ME/CFS research projects

View it in your browser.



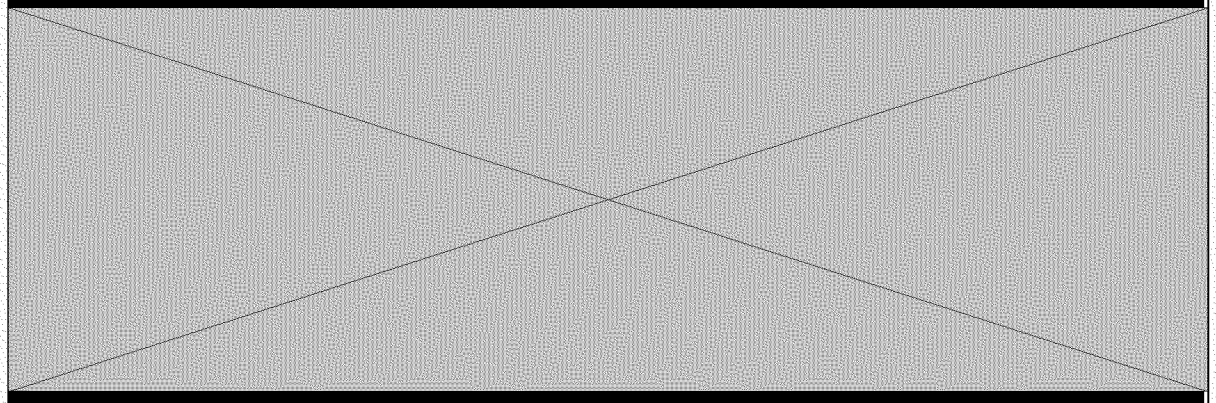
Announcing the 2017 SMCI Ramsay Award Program Results

2017 Ramsay Research Program Awards

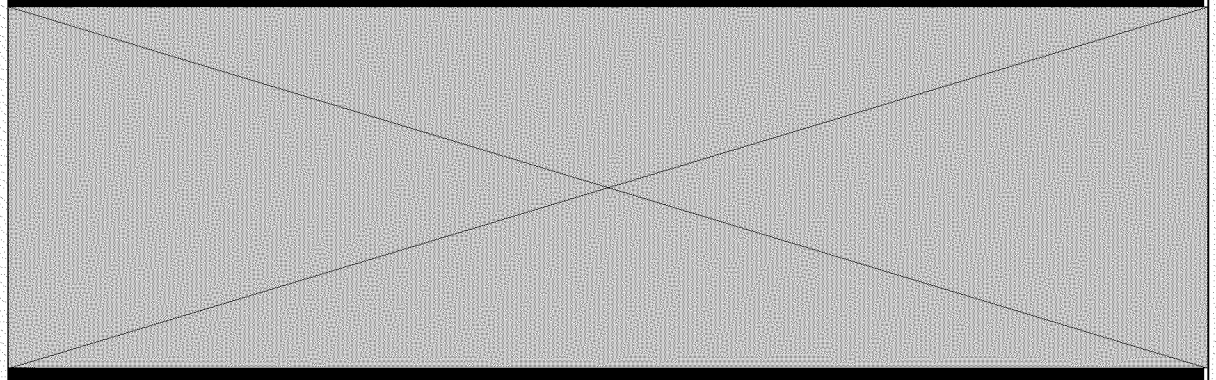
top 5 proposals

peer review

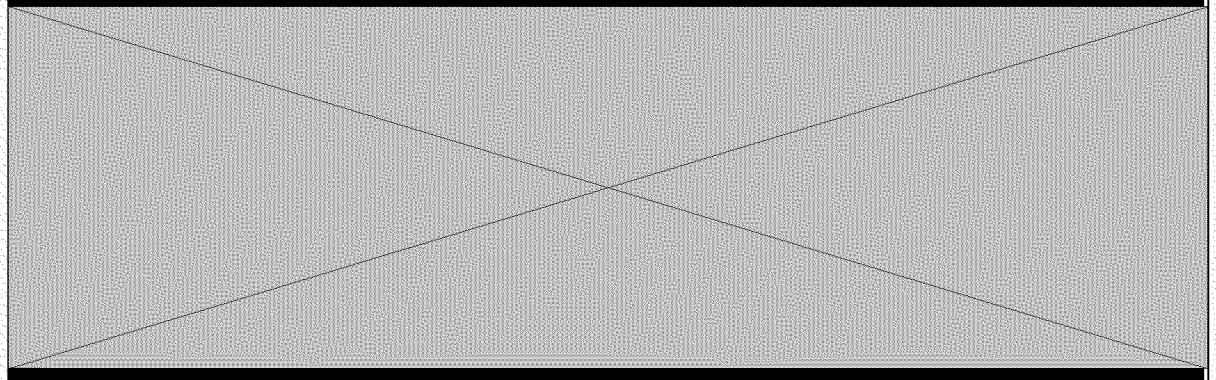
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Team 1 (Sweden): Biomarkers for initiation (infection) and metabolic derangement in ME/CFS

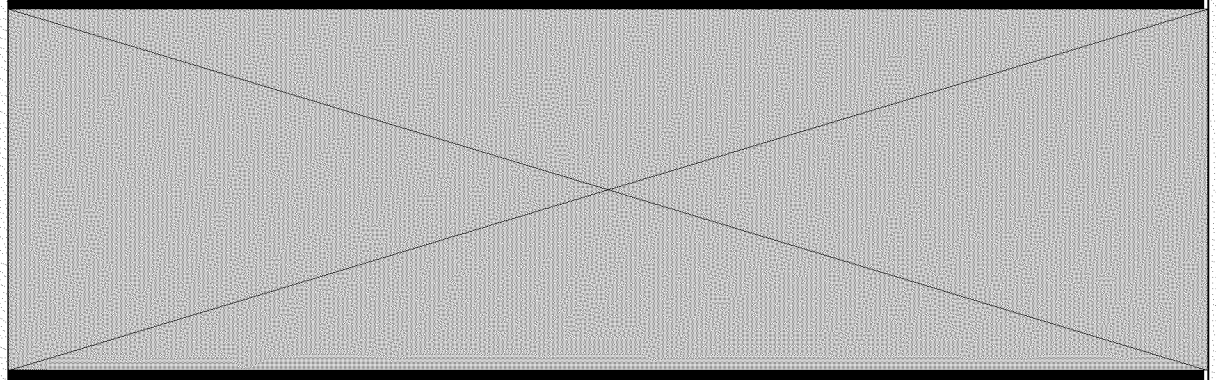


Team 2 (USA & Spain): Effect of ME/CFS on epigenetic regulation in specific immune cell types

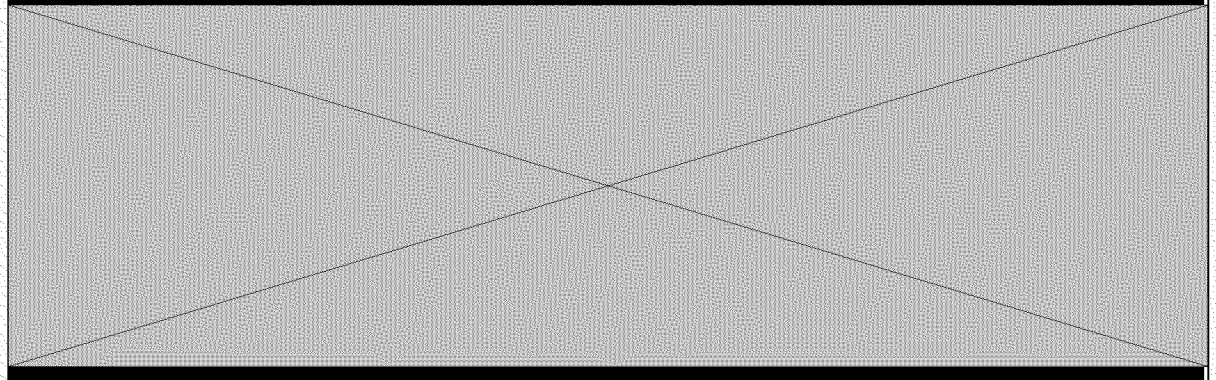


Team 3 (United Kingdom): Investigating alterations in the intestinal

virome in CFS/ME

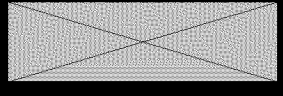


Team 4 (Germany): Immunometabolism of T cells and monocytes in ME/CFS



Team 5 (Israel): Deciphering antibody reactivities against autoantigens & the microbiome in ME/CFS

here



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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Todd Upshaw
Sent: Thur 11/2/2017 6:33:23 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Todd Upshaw
10710 East 98th St. N
Owasso, OK 74055

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Ollen Rivers
Sent: Tue 10/31/2017 5:28:03 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

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Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Ollen Rivers
706 Greenbriar
Roswell, NM 88203

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Cody gary
Sent: Thur 11/2/2017 6:03:27 PM
Subject: Help Protect Refiners Jobs In Reference to Docket ID No. EPA–HQ– OAR–2017–0091

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS (Docket ID No. EPA–HQ– OAR–2017–0091) in a way that fixes this inequity.

Thank you.

Cody gary
796 North Lone pine drive
Cleveland, OK 74020

To: Tejada, Matthew[Tejada.Matthew@epa.gov]
Cc: Dravis, Samantha[dravis.samantha@epa.gov]
From: Jacqueline V. Norris
Sent: Thur 11/2/2017 3:11:24 PM
Subject: RE: Reorganization OEJ/OECA in EPA Office of Policy

How does EPA Local Government Committee play a role with OEJ/OECA?
How are communities made aware of the goals?

a) Protecting America's Water
b) Cleaning Up Our Communities
c) Environmental Justice (EJ)
d) Air and Energy

How are members/or elected mayoral leadership selected for "Small Communities Advisory Subcommittees (SCAS)?

Cordially,

On Nov 2, 2017 9:29 AM, "Tejada, Matthew" <Tejada.Matthew@epa.gov> wrote:

That is still us, but we do not have any formal authority to "review".

Matthew Tejada

Director - Office of Environmental Justice

Environmental Protection Agency

202-564-8047

From: Jacqueline V. Norris [mailto:keanjagreen@gmail.com]
Sent: Thursday, November 02, 2017 7:54 AM
To: Tejada, Matthew <Tejada.Matthew@epa.gov>; Dravis, Samantha <dravis.samantha@epa.gov>
Subject: Re: Reorganization OEJ/OECA in EPA Office of Policy

oops,

The most important question is the one below:

1) Is there a designated office responsible for conducting an environmental justice review of programs, policies, and activities/or if so what office?

Rev. Jacqueline V. Norris [Jaci]

Social Engineer Consultant

KeAnJa Prince George's Environmental Social Justice

Marginalized Community Collaborative/Graduate EPA's

Environmental Justice Academy/Certified EJ Academy Train-the-Trainer/Region IV Office EJ

& Sustainability in partnership/Atlanta Metropolitan

State College & Underserved Partnership Program

(240) 351.0983 (Cell)

On Thu, Nov 2, 2017 at 7:23 AM, Jacqueline V. Norris <keanjagreen@gmail.com> wrote:

> Thanks for your quick response on yesterday. My thoughts last night had me to wonder about whether OEJ will still collaborate with OECA on how each section will conduct environmental justice reviews of its health and environmental mission/or goal programs, policies, and activities. Thus, I have the following questions/or thoughts:
>
> - How/or will OEJ/OECA utilize EPA Strategic Plan 2018-2020 as it guidance to identify activities, initiatives, and/or strategies that address the integration of environmental justice (stewardship) and incorporate them (new progressive initiatives) into the National Program

Managers'planning and budgeting documents and program agreements?

- If my memory/or analogy is correct, OEJ appears to have an "ex officio" association/or membership on the Agency's Steering Committee. An Agency Steering Committee, body, that oversees regulatory policy for the Agency/or the development of its rules. Therefore, will both offices, OEJ/OECA still be a part of this body/or has this role been eliminated?

- What will be the roll of EPA to continue the "Fundamentals of Environmental Justice training from headquarters/or throughout the regions?

Cordially,

Rev. Jacqueline V. Norris [Jaci]

Social Engineer Consultant

KeAnJa Prince George's Environmental Social Justice

Marginalized Community Collaborative/Graduate EPA's

Environmental Justice Academy/Certified EJ Academy Train-the-Trainer/Region IV Office EJ

& Sustainability in partnership/Atlanta Metropolitan

State College & Underserved Partnership Program

(240) 351.0983 (Cell)

On Wed, Nov 1, 2017 at 3:23 PM, Tejada, Matthew <Tejada.Matthew@epa.gov> wrote:

Thanks Jacqueline for sharing those thoughts. And yes, we absolutely will

continue to play this same role, just from a different place within the Agency that is arguably in a much better position to support our cross Agency integration of environmental justice tools and concerns.

Matthew Tejada

Director - Office of Environmental Justice

Environmental Protection Agency

202-564-8047

From: Jacqueline V. Norris [mailto:keanjagreen@gmail.com]
Sent: Wednesday, November 01, 2017 12:34 PM
To: Dravis, Samantha <dravis.samantha@epa.gov>; Tejada, Matthew <Tejada.Matthew@epa.gov>; jacinorris_eja@hotmail.com
Subject: Re: Reorganization OEJ/OECA in EPA Office of Policy

Hello Everyone,

I had some time to review and reflect on historical notes (2006 to Present) emergence of OEJ under the office of OECA. It appears OECA created "Environmental Justice Strategic Enforcement Screening Tool (EJSEAT) to serve as "a consistent methodology that would enable to OECA to identify communities or areas experiencing disproportionate environmental and public health burdens for the purposes of enhancing focusing OECA's enforcement and compliance activities in those areas."

For example, things have emerged and the offices OEJ/OECA are now separate under Policy. Will it still be the intent of both offices to improve consistency in EPA EPA's environmental stewardship (justice) programs that are moving towards having States initiate environmental stewardship (justice) regulations by partnering with EPA/EJIWG, and Environmental Council of States, which is a 501c(4).

These are just some questions as it relates to the role out the two

sections, OEJ/OECA, which is now within the Office Policy, which seems more to design policy and regulatory initiatives with states nationally.

These are just my thoughts as you move out to meet with environmental communities before the end of the year.

Rev. Jacqueline V. Norris [Jaci]

Social Engineer Consultant

KeAnJa Prince George's Environmental Social Justice

Marginalized Community Collaborative/Graduate EPA's

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State College & Underserved Partnership Program

(240) 351.0983 (Cell)

On Wed, Oct 11, 2017 at 2:39 PM, Jacqueline V. Norris <keanjagreen@gmail.com> wrote:

Good Afternoon,

You had mentioned Office of Environmental Justice has now moved within the Office of Policy. As a faith-based ordained leader, I would like to discuss with other faith-based leaders, such as headquarters, regional offices, private entities, NEJAC/or the Federal Inter-Agency Environmental Justice Work Group has worked collaboratively on the below initiatives from September 2016 to present. This includes giving a brief outline how EPA and Inter-Agency Work Group will collaborate in the future from a "rule of law" or policy perspective being implemented/or modified?

Please provide case studies already funded/or ended in the last year.

Civil rights and environmental justice compliance plan

Applies to recipients of federal funding, public and private

1. Describe what do you plan to do

2. Analyze benefits and burdens on all people

Statistical and anecdotal evidence

GIS mapping and demographics

Define standards to measure progress and hold officials accountable

3. Analyze alternatives

4. Include people of color and low-income people

5. Implement a plan to distribute benefits and burdens fairly and

avoid discrimination: both intentional discrimination, and unjustified discriminatory impacts.

Cordially,

Rev. Jacqueline V. Norris [Jaci]

Management Consultant

KeAnJa Prince George's Environmental Social Justice

Marginalized Community Collaborative/Graduate EPA's

Environmental Justice Academy/Certified Environmental Justice Academy Train-the-Trainer/EPA's Office of Environmental Justice & Sustainability partnership with Atlanta Metropolitan State College & Underserved Partnership Program

(240) 351.0983 (Cell)

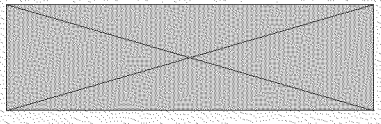
To: Dravis, Samantha[dravis.samantha@epa.gov]
From: virtualizationwebinars
Sent: Mon 11/6/2017 6:45:55 PM
Subject: Adobe Digital Government Technology Conference - Live Webcast

Thoughtbridge 392 Mason Rd. Milford, NH 03055 603-812-7399 Unsubscribe me from this database

LIVE Webcast:

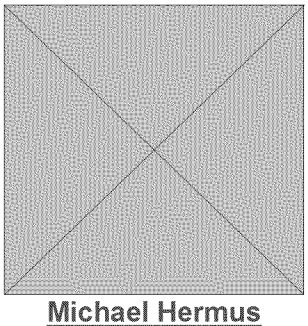
Adobe Digital Government Technology Conference

- **Wednesday, November 15, 2017**
- **9:00am - 3:00pm ET;** 6:00am - 12:00pm PT
- Online

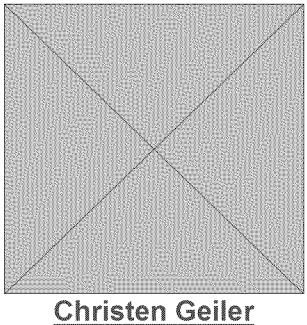


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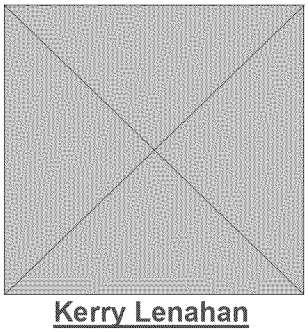
Featured Speakers



Michael Hermus
Chief Technology Officer, Department of Homeland



Christen Geiler
Management & Program Analyst, Office of the Assistant of Secretary for

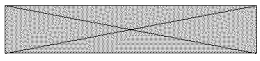


Kerry Lenahan
Digital Services Expert, Department of

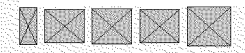
Security	Public Affairs, Digital, Health and Human Services	Veterans Affairs
**Pending Agency Approval*		**Pending Agency Approval*

Check out the **agenda** or see the full **line up of speakers**.

Join us on November 15th and leave with the tools, techniques, and best practices to improve how you meet agency projects and missions!



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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: The Washington Post
Sent: Mon 11/6/2017 5:51:08 PM
Subject: You're invited - A World in Balance: Solutions for Sustainability event at The Washington Post

Humans are changing the Earth in unprecedented ways. Global population growth, changes in behavior and migration, and new trends in industry and technology may leave lasting impacts on natural resources and the environment.

On November 16, The Washington Post will bring together policymakers, business leaders and experts in the sustainability and conservation community to discuss new approaches for a sustainable future and assess the relationship between humans and the environment.

Speakers will debate the tradeoffs involved in conserving Earth's natural resources, discuss new models for sustainable business practices and examine the relationship between democracy and sustainable development.

[redacted]

Thursday, November 16
Doors open for a light breakfast reception - 8:30 a.m.
Program - 9:00 - 10:30 a.m.

Free to attend. Pre-registration is required.

The Washington Post

1301 K Street NW
Washington, D.C. 20071

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To: Myron Ebell[Myron.Ebell@cei.org]
From: Myron Ebell
Sent: Wed 11/15/2017 4:59:56 PM
Subject: Cooler Heads Coalition

Four items of interest pasted below:

1. TPPF-THF energy and climate conference 30th November;

2. Washington Times story on undisclosed private support for Governors' climate grandstanding as revealed by Chris Horner's freedom of information requests;

3. Climate Wire and Bloomberg BNA stories about the ongoing takeover of ALEC by the green energy subsidies crowd; and

4. E & E PM story on OSTP political appointee confirming that (after the debacle of the release of the National Climate Assessment draft) the Trump administration will keep climate research reports moving ahead on auto-pilot.

1. The Texas Public Policy Foundation and the Heritage Foundation are holding their At the Crossroads energy and climate conference all day on Thursday, 30th November at the Heritage Foundation. Registration at

https://www.texaspolicy.com/events/detail/at-the-crossroads-iv-energy-and-climate-policy-summit. Agenda at https://www.crossroads-summit.com/agenda/.

2. https://www.washingtontimes.com/news/2017/nov/14/governors-outsource-climate-campaigns-to-advocacy-/

Washington Times, 15th November 2017

Democratic governors outsource climate campaigns to activist groups, emails reveal

By Valerie Richardson



Washington Gov. Jay Inslee, who is helping lead a coalition of 14 states and Puerto Rico at the

Bonn climate summit, is one of the Democratic governors with a kind of shadow staff supplied by advocacy groups. (Associated Press/File)

It may look as if Democratic governors — not climate change activists — are driving the campaign to "fill the void" left by President Trump's exit from the Paris agreement, but that's not necessarily the impression left by behind-the-scenes emails.

Shortly after the June 1 launch of the U.S. Climate Alliance, a senior aide to Washington Gov. Jay Inslee warned Climate Nexus Executive Director Jeff Nesbit that some governors were considering withdrawing from the multistate coalition aimed at meeting the targets of the global warming accord.

"Can you call me asap?" Sam Ricketts, director of Mr. Inslee's Washington, D.C., office, asked in a June 5 email. "Sounds like we states have some particular, and substantively very valid, concerns about how this coalition is messaged. If not met I think states will pull out."

"OMG, come on. I've been dealing with this all weekend," Mr. Nesbit responded. "We're not messaging it incorrectly at this point. But yes, I'll call you."

It turns out that the governors who descended this week on the Bonn climate summit had plenty of help — not just from state aides, but also from a kind of shadow staff supplied by climate change advocacy groups and funded by liberal foundations in support of the ambitious foreign policy effort.

A cache of emails obtained via open records requests by Competitive Enterprise Institute senior fellow Chris Horner shows state employees relying on activists for organizational and communications work in what he described as "outsourcing government off the books."

The relationship raises questions about whether the governors have crossed an ethical line by bringing in privately funded advocacy groups to help staff a multistate operation — apparently at no charge — and whether their time and resources constituted a gift that would need to be disclosed to the public.

"It is inarguable. They are being given very expensive staff time and services," said Mr. Horner. "These governors should immediately release all details about the collusion with these groups, who themselves have a lot to answer for."

The alliance of 14 states and Puerto Rico is led by Mr. Inslee, California Gov. Jerry Brown and New York Gov. Andrew Cuomo. Their offices did not respond immediately Tuesday to requests for comment.

"In all three of those states, a gift is anything of value," Mr. Horner said in an email. "The gifts here include a report, and PR services yielding, for example, a New York Times story promoting their 'leadership.' We see they met to discuss private offers to hire staffers to be at politicians' disposal."

Who's in charge? Who's paying?

It's not uncommon for governors to seek out the expertise of think tanks, universities, corporations and advocacy groups when preparing policy initiatives on matters such as energy, education and the economy.

But the email traffic from Mr. Inslee's office indicates that activists play an outsize role in not merely advising but also running the day-to-day operations of the "bipartisan coalition of states," which includes one Republican: Massachusetts Gov. Charlie Baker.

The U.S. Climate Alliance website is operated by climate activists, not state staff, judging from another email exchange between Mr. Ricketts and Mr. Nesbit.

"How come governors aren't even listed on the website?" Mr. Ricketts asked in a June 5 email.

Mr. Nesbit replied: "They will be! I promise. It's controlled by WWF [apparently referring to the World Wildlife Fund]. They're melting down over there. I'll make sure the 9 governors are listed ASAP."

Mr. Nesbit also wore the hat of press secretary, saying he needed to send a joint statement from Mr. Inslee, Mr. Brown and Mr. Cuomo to The New York Times.

"Do you have it? Is it approved? Is Inslee available to talk to the NYT and others today before Trump does his Rose Garden ceremony at the WH?" Mr. Nesbit asked in the June 1 email.

According to Mr. Nesbit, Climate Nexus, a sponsored project of the Rockefeller Philanthropy Advisors, provided its services free of charge and without a contract.

"We worked with them at no cost just as we work with a wide range of groups," Mr. Nesbit said in an email to The Washington Times.

In September, the alliance issued a 12-page report that included extensive data from the Rhodium Group on the economic output and net greenhouse gas emissions of the 14 member states compared with the rest of the states.

Who compiled and paid for the report? Not Rhodium, according to a spokeswoman, although The New York Times described it at the time as "a new study by the research firm Rhodium Group."

"U.S. Climate Alliance state staff put together the report using data that the Rhodium Group produced as part of previous projects which were funded by private philanthropy," Rhodium spokeswoman Hannah Hess said in an email to The Washington Times.

The Rhodium Group is headed by former Hillary Clinton campaign climate and energy adviser Trevor Houser, who also co-directs the Climate Impact Lab.

'A tsunami of Pulitzers'

Even before Mr. Trump announced his intention in June to exit the 2015 Paris climate accord, state employees in California, New York and Washington had discussed enlisting the help of outside advocacy groups.

Aimee Barnes, senior adviser to Mr. Brown, proposed reaching out to the Georgetown Climate Center, Under2 Coalition and others, saying that "it can't always be us staff running around trying to corral each other for sign on."

"We are fortunate that at the moment there are many resources keen to be at our disposal to support us further, but in order to make the best use of them, we need to tell them what we need," Ms. Barnes said in a May 5 email.

Mr. Ricketts responded in a May 9 email by noting, "Theres of course a plethora of advocate and funder interest," adding, "we can approach the different groups (G-town, Rhodium, UNF, whomever) about which of them will play a roll."

A week later, Georgetown Climate Center Deputy Director Kathryn Zyla provided an update in an email sent to state staffers and climate change advocates.

"We also wanted to let you know that we are working with the Georgetown IT department to develop a platform that can assist this group with communications and shared resources, and will keep you posted. (Please let us know if you have any thoughts on key features for that platform.)," Ms. Zyla said in a May 16 email.

GCC spokesman Chris Coil said the group had no contract with the states. "We support state engagement on climate change (as we have done on a bipartisan basis for many years) free of charge," he said.

Inslee senior adviser Chris Davis put in a plug for Ann McCabe and her team at the Climate Registry, calling them in a June 5 email "great partners who've covered our costs for COPs and provided extraordinary on site services and support."

The Bonn climate summit, which runs through Friday, is officially known as COP23, or the 23rd session of the Conference of the Parties, an annual event sponsored by the U.N. Framework Convention on Climate Change.

The 2015 Paris Agreement, a nonbinding accord calling for signatory nations to lower emissions in order to hold temperature increases below 2 degrees Celsius this century, was hammered out at COP21.

Those attending COP23 included Mr. Brown and Mr. Inslee, as well as fellow alliance

members Oregon Gov. Kate Brown and Virginia Gov. Terry McAuliffe, who participated in a Monday panel on "U.S. state-driven climate leadership."

"The U.S. Climate Alliance has a message for the world: We are here. We are your allies on climate change," the alliance said in a Nov. 6 press release, which listed a Climate Nexus staffer as the contact.

Mr. Trump said he would withdraw from the Paris agreement unless the conditions were changed, saying it puts the U.S. economy at a "very, very big economic disadvantage."

Is enlisting climate activists to assist state staff a problem if they are both acting at the direction of the governor? Mr. Horner asked how the media would react if, for example, the Koch brothers provide staffing on behalf of a Republican governor.

"This would unleash a tsunami of Pulitzers and hysteria if the political parties or priorities were changed," said Mr. Horner. "Here is a real test for 'good government' activists — is this all right if the 'right' politicians and donors pushing the approved agenda outsource government?"

3. https://www.eenews.net/climatewire/2017/11/15/stories/1060066527

ClimateWire

ADVOCACY

Climate civil war brewing at ALEC

Zack Colman, E&E News reporter

Published: Wednesday, November 15, 2017

Members of the American Legislative Exchange Council, a heavyweight conservative policy organization, are feuding about their approach to climate change.

ALEC's conservative wing says the organization — which convenes corporations, think tanks and legislators — is capitulating to left-of-center interests to regain funders after an exodus of corporate titans like Google LLC and Royal Dutch Shell PLC over the organization's climate change positions. Others, however, contend that the conversation on climate has shifted away from hard-liners, with a growing number of Republicans and conservatives embracing clean technology and climate science, according to several of the group's members.

"I think the attention they got on energy and environmental issues was so intense that that's where they focused on their outreach with the center-left," said Paul Blair, director of strategic initiatives with Americans for Tax Reform and a member of ALEC. "You can't pass the laugh test with going center-left on tax issues. To me, you can't pass the laugh test with me by going center-left on energy and environment issues. But they apparently think they can."

It's a fight that reflects the broader conservative debate over climate change and the direction of the Republican Party during the Trump administration.

And it will soon come to a head, as ALEC members prepare to vote on a measure that takes aim at U.S. EPA's endangerment finding on greenhouse gases. The Obama-era finding is a compilation of scientific evidence that forms the legal basis for EPA greenhouse gas regulations. It's despised by many conservatives.

ALEC's Energy, Environment and Agriculture Task Force is slated to vote on a draft resolution at a meeting in Nashville, Tenn., next month that calls "upon the Environmental Protection Agency to withdraw the 2009 endangerment finding for carbon dioxide and other greenhouse gases and conduct a new rulemaking on this issue."

If ALEC ultimately adopts the resolution, it will serve as a model resolution for state and federal lawmakers to express their disdain for the EPA finding. The vote will put big businesses and trade groups that sit on the ALEC task force on the spot regarding whether the endangerment finding is worth investigating.

"Robust debate comes from stakeholders engaging from a variety of perspectives. And that is precisely what's happening here," said ALEC spokesman Bill Meierling. He noted that the draft resolution could be amended or changed when the task force meets in Nashville.

The tug of war at ALEC mirrors the fight between voices skeptical of mainstream climate science — like the nonprofit Heartland Institute — and groups that are more moderate on climate change, like the U.S. Chamber of Commerce.

Heartland is rumored to be behind the endangerment resolution, with former North Dakota state Rep. Bette Grande (R) — who now freelances for Heartland and participates in ALEC matters — thought to have drafted it and handed off the language to a state lawmaker and ALEC member.

Heartland did not respond to a request for comment.

Heartland and its allies have pushed EPA Administrator Scott Pruitt to take on the endangerment finding, which the EPA chief has been reluctant to pursue. Corporate America, meanwhile, largely supported staying in the Paris climate agreement and retaining the Clean Power Plan — an Obama administration rule to curb power plant emissions — but ultimately lost those battles to far-right groups, though some hope Trump will ultimately remain in the global climate pact.

Bellwether moment?

The endangerment finding vote may serve as a bellwether for where ALEC stands on climate change.

Is ALEC part and parcel of a conservative movement that has questioned climate change and the policy responses to it? Or does it operate among the wider atmosphere of reputation-conscious corporations and even some moderates who have opposed the Trump administration on climate change?

But that calculation also belies a more fundamental point about ALEC — while it has a reputation as a far-right group advancing industry interests, it's also a member-driven organization. If ALEC is shifting on climate and energy, it's largely because its members have, too.

"If there were some grand conspiracy, I'd know about it, and there isn't," said Eli Lehrer, president of the free-market think tank R Street Institute, which supports a carbon tax. "To the extent things have changed, it's because opinions have changed."

At its core, ALEC is an organization about free markets and limited government. Thus, its members also have railed against and helped craft bills to roll back President Obama's climate and environmental measures, many of which were federal regulations, and local incentives for clean energy. At the same time, though, the group has come under fire for taking cash from fossil fuel companies threatened by the advance of clean energy while often neglecting to mention subsidies and incentives that legacy energy sources enjoy.

Longtime ALEC watchdogs view the endangerment finding draft resolution as an attempt by its conservative members to reorient the organization to its roots after several rudderless years on energy and environment matters. Part of that is a response to the Trump administration, said Nick Surgey, director of Documented, an organization that tracks the influence of corporations on public policy.

"This is a reflection of an organization that has shifted itself more into the mainstream of climate change in terms of rhetoric in the last three to four years," Surgey said. "Now they've got almost everything they want from Scott Pruitt and the EPA, and they have to justify their existence to their funders. And it seems like they're allying themselves with the more radical of the funders."

The cohesion between ALEC and the Trump administration is evident to ALEC CEO Lisa Nelson. She sent a congratulatory email to its members on Jan. 30 to celebrate the new administration, saying, "This administration does have the potential to be an ALEC administration. It is full of the people and ideas we've advanced since 1973."

But conservatives familiar with ALEC said they're concerned that the organization has

gravitated to satisfying interests that aren't committed to the free-market principles upon which the group was created. They said that dynamic is most apparent in the energy and environment space.

"When it comes to the policies of the organization, ALEC does have strong positions on issues that are consistent with the free market," Blair said. "The issue is if they are planning to upend those principles to fundraise in the future."

They worry that ALEC is trying to plug a funding gap following the high-profile exits of Google, BP PLC, Enterprise Rent-A-Car, Royal Dutch Shell PLC and others, all of which blamed the organization's stance on climate change for their departure. Those companies left largely over pressure from shareholders who were spurred into action after activist groups harped on ALEC funding streams. The conservative billionaire industrialist Koch brothers are big donors; Exxon Mobil Corp., a member of the Energy, Environment and Agriculture Task Force, is also a major funder.

Conservatives revolt

ALEC's conservative members saw warning signs recently when feathers were ruffled over what they said in the past would have been a fairly easy decision.

The energy task force couldn't agree to move on a resolution that opposed property assessed clean energy, or PACE — a financing mechanism to fund clean energy or energy efficiency upgrades. Conservatives were worried about exposing taxpayers to losses, since municipal bonds underwrote many of the projects.

But many of ALEC's members also have PACE interests. One conservative source said those groups backing PACE angled to kill the resolution and criticized ALEC for trying to appease such funders. Rockwood Group CEO Scott Zajac, whose investment firm operates in the PACE world, was particularly vocal in opposing the resolution within ALEC, the source said.

Others, though, noted that's just how the energy space is these days — corporations are on board with clean energy. Rejecting mainstream climate science or trying to stymie growth of energy sources that compete with ALEC's old guard of coal, natural gas and oil companies doesn't fly anymore.

The PACE resolution foundered over much acrimony in ALEC's July meeting and was forbidden to ever return as a discussion point. That result has generated revolt from some of the more dogmatic conservatives.

"I'm concerned that there has been an effort more recently to try and table what in the past would have been considered straightforward proposals based on free-market principles," said Tom Pyle, president of the conservative energy think tank Institute for Energy Research. "That's what ALEC is supposed to be advancing."

That effort, though, is minor compared with the endangerment finding, which is a lightning rod in climate policy circles.

Publicly traded companies on the Energy, Environment and Agriculture Task Force are getting calls about the upcoming vote on the draft endangerment finding resolution, according to a source familiar with the situation. Companies on that task force include Exxon Mobil, Pfizer Inc. and United Parcel Service Inc.

"We have not received calls on it to my knowledge, but either way it is not an issue we would support," UPS spokeswoman Kara Ross said in an email. "As one of the leaders in sustainable and transparent logistics, our position on climate change is clear."

Aside from Exxon Mobil, Pfizer and UPS, the task force also includes lobby group heavyweights such as the Edison Electric Institute, American Fuel & Petrochemical Manufacturers, National Rural Electric Cooperative Association and American Gas Association.

E&E News contacted all those members. EEI, AGA, AFPM, Pfizer and Exxon Mobil did not respond to requests for comment. NRECA said it didn't want to challenge the endangerment finding because it supports "inside the fence" carbon emissions regulations on power plants to replace the Clean Power Plan, which Pruitt formally moved to repeal last month.

"Challenging the endangerment finding would lead to a different result, which we think would be unwise," spokesman Dan Riedinger said in an email.

https://www.bloomberg.com/news/articles/2017-11-15/coal-funded-alec-prods-trump-to-say-climate-change-not-a-risk

Bloomberg

Koch-Funded Group Prods Trump's EPA to Say Climate Change Not a Risk

By Ari Natter

November 15, 2017, 10:40 AM EST

- Model bill aims to prod Trump to rescind endangerment finding
- ALEC has faced defections over its criticisms of climate rules

A lobbying group funded by Koch Industries Inc. and coal giant Peabody Energy Corp. is moving to prod the Environmental Protection Agency to rescind its earlier determination that climate change is a risk to human health and welfare.

The American Legislative Exchange Council will consider a resolution that would be offered to state legislatures to adopt as a way of pressuring the Trump administration to uproot his predecessor's efforts to address climate change, attacking the very science that shows temperatures rising and storms increasing.

The EPA's 2009 endangerment finding established that climate change warrants regulation.

"So long as the endangerment finding remains in place, efforts to roll back climate regulations will likely fail," according to the draft document, which is on the group's website and may be voted on in an ALEC meeting next month. "Research has shown that recent changes in temperatures, sea level rise, and the frequency of extreme weather events are far from unusual in the historic and geophysical record."

That position risks opening a new rift in the group, which has faced defections from corporate titans such as Ford Motor Co. and BP Plc. for its efforts against renewable energy and carbon regulation. ALEC is a group of free-market organizations, corporate representatives and state lawmakers that adopts model bills which lawmakers then introduce in state legislatures nationwide. ALEC has denied that it rejects mainstream climate science, but it has downplayed the risks.

"At this early stage in our process it's merely a proposal for discussion," said Bill Meierling, an ALEC spokesman.

Companies such as Exxon Mobil Corp., which says it accounts for climate change in its investment decisions, have also sponsored the organization, according to the Center for Media and Democracy.

"I think it will receive overwhelming support from the state legislators on the task force, but the private members will be divided," Myron Ebell, the director of the Competitive Enterprise Institute's Center for Energy and Environment and a skeptic of global warming. "That is because the private members now include a number of renewable energy companies that depend on subsidies and mandates and oppose free markets."

The resolution may be voted on at the group's policy summit in Nashville, Tennessee next month. It's part of an effort by groups such as the Heartland Institute and the Competitive Enterprise Institute to prod President Donald Trump's EPA into erasing the basis for any climate regulations. So far, EPA has steered clear of trying to deny the basic science and crafted its moves to rollback President Barack Obama's regulations as necessary because of legal constraints.

"This is not a fight that Exxon or the utilities would want," David Pomerantz, executive

director of the Energy and Policy Institute, a San Francisco group that supports renewable energy. "This is not there first foray into denial but since then they have been pretty quiet on this stuff."

4. https://www.eenews.net/eenewspm/2017/11/14/stories/1060066515

E & E News PM

WHITE HOUSE

Trump deputy vows admin will keep working on climate

Christa Marshall, E&E News reporter

Published: Tuesday, November 14, 2017

White House officials will continue to "play our part" on climate change and work on related science reports, presidential adviser Michael Kratsios said this week.

Currently deputy assistant to the president and the deputy U.S. chief technology officer, Kratsios was asked about the Trump administration's climate stance during a half-hour public interview at the Internet Association conference that was posted online today.

"The climate science issue is one that is covered by a whole host of agencies and offices throughout the federal government," Kratsios said.



Michael Kratsios. Kratsios/LinkedIn

"We continue to do that work and play our part among the 13 agencies, which are part of the [U.S. Global Change Research Program]," he added, referring to the release this month of the latest version of the National Climate Assessment.

That report found that humans are having an unprecedented impact on the climate by burning fossil fuels (*E&E News PM*, Nov. 3).

One focus of the Office of Science and Technology Policy is creating an environment "where the next great technologies for the energy sector can be developed here in the U.S.," including for renewables, said Kratsios, a former top aide to White House adviser Peter Thiel.

He said "yes" when he asked if he personally believed that humans are driving warming.

"The administration has been very clear. The climate is changing. There's definitely no denying that," he said.

OSTP, where Kratsios works, historically has played a coordinating role in the national climate assessment and other federal climate research, but it's been unclear since the election how much the office would focus on the issue, or energy in general. In August, records obtained by a Freedom of Information Act request showed that OSTP eliminated many of its former climate positions (*Greenwire*, Aug. 4).

Last month, Trump set a record for going longer than any modern president without an OSTP director in place.

Asked about that, Kratsios said that "we're very excited to have someone nominated very soon" but did not provide a timeline. Currently, OSTP general counsel Rachael Leonard is serving as acting director, according to an administration official.

Eventually, Kratsios said OSTP likely would have about 60 to 70 staffers, which is about half the level at the end of the Obama administration but in line with historical numbers.

"I don't see head count as a proxy for commitment to particular policy initiatives," he said.

Kratsios also said OSTP is leading a White House review of the U.S. nuclear fleet, along with the National Economic Council and National Security Council.

"We should be seeing some results of that in coming months," he said.

Myron Ebell

Director, Center for Energy and Environment

Competitive Enterprise Institute

1310 L Street, N. W., Seventh Floor

Washington, DC 20005, USA

Tel direct: (202) 331-2256

Tel mobile: (202) 320-6685

E-mail: Myron.Ebell@cei.org

Stop continental drift!

From: Inge, Carolyn
Location: DCRoomARN3500/OPEI
Importance: Normal
Subject: Meeting with James Hagedorn of the Scotts Miracle-Gro Company
Start Date/Time: Tue 6/27/2017 8:15:00 PM
End Date/Time: Tue 6/27/2017 8:45:00 PM

Topic: Meeting with James Hagedorn of the Scotts Miracle-Gro Company

Date: 6/27

Time: 2:00-2:30

Location: 3500 WJCN

Required: Beck, Nancy <beck.nancy@epa.gov>; annette.chapman@scotts.com; ann.aquillo@scotts.com; jim.king@scotts.com; hon.sljohnson@gmail.com

Cc: Inge, Carolyn <Inge.Carolyn@epa.gov>; Kime, Robin <Kime.Robin@epa.gov>

Directions: Please use the **William Jefferson Clinton North Entrance located on your right as you exit the Federal Triangle Metro Station**. Please arrive 10 minutes prior to the meeting with photo IDs to clear Security.

EPA Contact: For an escort from Security to the meeting call (202) 564-4332; for all other matters call Robin Kime (202)564-6587.

Contact:

Annette Chapman, Sr. Executive Assistant to James Hagedorn

The Scotts Miracle-Gro Company

14111 Scottslawn Road

Marysville, Ohio 43041

937 644-7431

From: Inge, Carolyn
Location: 3513A
Importance: Normal
Subject: General Discussion
Start Date/Time: Wed 3/15/2017 8:30:00 PM
End Date/Time: Wed 3/15/2017 9:15:00 PM

Topic: General Discussion

Date: Wednesday (3/15)

Time: 4:30 p.m. – 5:15 p.m.

Location: 3513A

Required: Tgibson@steel.org; stephanie.daigle@celanese.com

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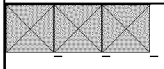
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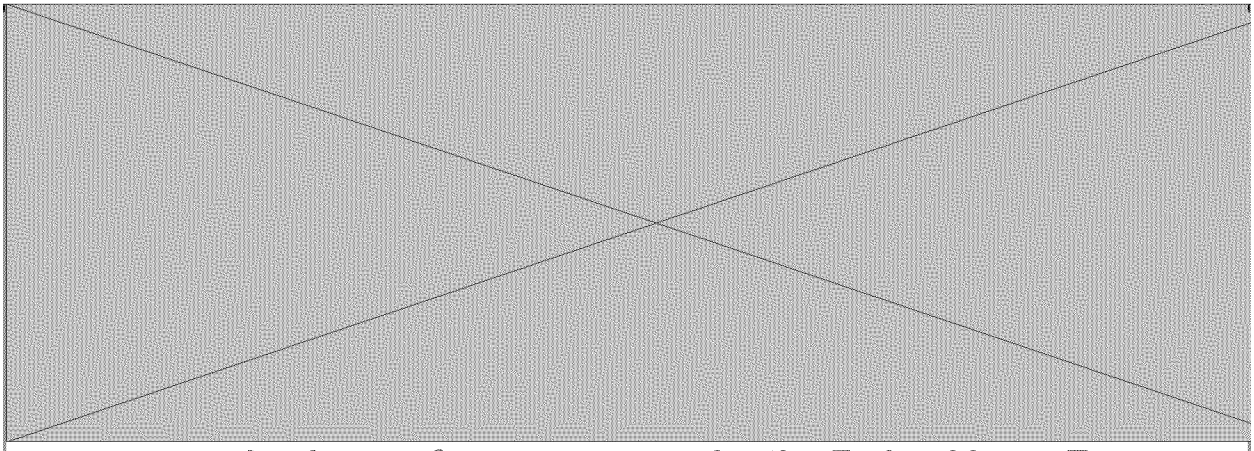
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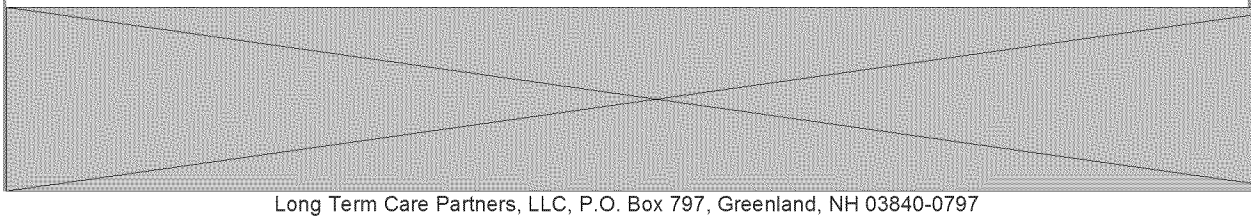
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Sent: Tuesday, April 04, 2017 4:37 PM
To: 'dravis.samantha@epa.gov' <dravis.samantha@epa.gov>
Cc: David Gelsomino <dgelsomino@politico.com>; 'Irving, Verna' <Irving.Verna@epa.gov>

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Committee		
	Pipeline And Hazardous	
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To: 'dravis.samantha@epa.gov' <dravis.samantha@epa.gov>
Cc: David Gelsomino <dgelsomino@politico.com>; 'Irving, Verna' <Irving.Verna@epa.gov>
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Hugh

Energy Topics

Committees	BLM	Charles Grassley
House Natural Resources Committee	EPA	Cory Gardner
Senate Environment And Public Works Committee	Pipeline And Hazardous Materials Safety Administration	Mike Simpson
House Energy and Commerce Committee	Executive Branch	Raul Grijalva
House Appropriations Committee	Bureau of Reclamation	Colette Honorable
Senate Finance Committee	Congress	Earl Blumenauer
Senate Commerce Committee	DOE	Ed Markey
House Transportation and Infrastructure Committee	NRC	Jim Inhofe
House Oversight and Government Reform Committee	NOAA	Ron Wyden
House Science Space and Technology Committee	U.S. Fish And Wildlife Service	Lamar Alexander
Senate Energy And Natural Resources Committee	White House	Lisa Murkowski
Companies	USDA	Maria Cantwell

BP
ExxonMobil
Economy
Appropriations
Budget
Electricity/Fuels
Natural Gas
Offshore Drilling
Hydraulic Fracturing
Ethanol
Biofuels
Energy Storage
Fuels
Keystone XL Pipeline
Electricity/Grid
Coal
Gas Prices
Power
Energy/Environment
Agriculture
Pipelines
Oil
Conservation
Solar
Renewables
Utilities
Water
Nuclear
Global Affairs
Russia
International
Green Energy
Energy Efficiency
Climate Change
Green Tech
Hydroelectric
Geothermal
Wind
Industry & Advocacy Groups
Advocacy
Legislature, Admin &

Army Corps of Engineers
Courts
FERC
BOEM/BSEE
Interior Department
Nuclear Energy
Yucca Mountain
Other
Energy Influence
Ryan Zinke
2020
Trade
Science
Mass Transit
Mining
Opinion
Scott Pruitt
Batteries
Tom Udall
2018
States
Tax Incentives
John Barrasso
Technology
Business
Betty McCollum
Land & Water Conservation Fund
Transition 2017
Paul Tonko
Ken Calvert
Loan Guarantees
Bobby Rush
Rick Perry
Lobbying
Taxes
People
Sheldon Whitehouse
Tom Steyer
Jason Chaffetz
Fred Upton

John Thune
Bill Shuster
John Shimkus
Frank Pallone
Marcy Kaptur
Greg Walden
Stephen Burns
Diana DeGette
Rob Bishop
Dianne Feinstein
Tom Carper
Tim Murphy
Real Estate/Infrastructure
Transportation
Infrastructure
Dams/Levees
Regulations & Standard Practices
TSCA
Regulations
Water Resources Development Act
Clean Water Act
Renewable Fuel Standard
Renewable Portfolio Standards
Clean Air Act
Safety & Information
Waterways
Technology, Internet & Security
Cybersecurity
Water
Waters Of The United States
Desalination
Surface Water
Wetlands
Flood Control
Water Law
Drinking Water
Energy-water Nexus
Ground Water
Wastewater
Drought

Agencies

If there are any key words you are interested in that you do not see on the list above, please write them in below and they will be added to your account.

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_____ _____ -

_____
_____ _____ -

Hugh Stapleton | Account Management Associate | **POLITICO**PRO

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To: Dravis, Samantha[dravis.samantha@epa.gov]
Cc: David Gelsomino[dgelsomino@politico.com]; Irving, Verna[Irving.Verna@epa.gov]
From: Hugh Stapleton
Sent: Tue 4/4/2017 8:37:20 PM
Subject: Welcome to POLITICO Pro!

Hi Samantha,

Welcome to POLITICO Pro. To get you started, I have customized you with the CEO Report and the morning Energy newsletter. I have also provided topic tags that our editorial team has handpicked within the Energy policy area. Please highlight the issues you would like to track in real time and I will update your settings accordingly.

Your POLITICO Pro login credentials are as follows:

Website: www.politicopro.com

Username: dravis.samantha@epa.gov

Password: SamanthaTemp

If you would like a walkthrough of Pro, Dave (your POLITICO Pro account manager with whom I work) holds online training sessions every Friday at 10:00am. Please let me know if you plan on attending any of these sessions so I can ensure Dave is fully prepared. If you have any additional questions don't hesitate to reach out.

Best,

Hugh

Energy Topics

Committees	BLM	Charles Grassley
House Natural Resources Committee	EPA	Cory Gardner
Senate Environment And Public Works Committee	Pipeline And Hazardous Materials Safety Administration	Mike Simpson
House Energy and Commerce Committee	Executive Branch	Raul Grijalva
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Senate Energy And Natural Resources Committee	White House	Lisa Murkowski
Companies	USDA	Maria Cantwell
BP	Army Corps of Engineers	John Thune
ExxonMobil	Courts	Bill Shuster
Economy	FERC	John Shimkus
Appropriations	BOEM/BSEE	Frank Pallone
Budget	Interior Department	Marcy Kaptur
Electricity/Fuels	**Nuclear Energy**	Greg Walden
Natural Gas	Yucca Mountain	Stephen Burns
Offshore Drilling	**Other**	Diana DeGette
Hydraulic Fracturing	Energy Influence	Rob Bishop
Ethanol	Ryan Zinke	Dianne Feinstein
Biofuels	2020	Tom Carper
Energy Storage	Trade	Tim Murphy
Fuels	Science	**Real Estate/Infrastructure**
Keystone XL Pipeline	Mass Transit	Transportation
Electricity/Grid	Mining	Infrastructure
Coal	Opinion	Dams/Levees
Gas Prices	Scott Pruitt	**Regulations & Standard Practices**
Power	Batteries	TSCA
Energy/Environment	Tom Udall	Regulations
Agriculture	2018	Water Resources Development Act

Pipelines	States	Clean Water Act
Oil	Tax Incentives	Renewable Fuel Standard
Conservation	John Barrasso	Renewable Portfolio Standards
Solar	Technology	Clean Air Act
Renewables	Business	**Safety & Information**
Utilities	Betty McCollum	Waterways
Water	Land & Water Conservation Fund	**Technology, Internet & Security**
Nuclear	Transition 2017	Cybersecurity
Global Affairs	Paul Tonko	**Water**
Russia	Ken Calvert	Waters Of The United States
International	Loan Guarantees	Desalination
Green Energy	Bobby Rush	Surface Water
Energy Efficiency	Rick Perry	Wetlands
Climate Change	Lobbying	Flood Control
Green Tech	Taxes	Water Law
Hydroelectric	**People**	Drinking Water
Geothermal	Sheldon Whitehouse	Energy-water Nexus
Wind	Tom Steyer	Ground Water
Industry & Advocacy Groups	Jason Chaffetz	Wastewater
Advocacy	Fred Upton	Drought
Legislature, Admin & Agencies	Peter DeFazio	

If there are any key words you are interested in that you do not see on the list above, please write them in below and they will be added to your account.

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Rizzo, James
Sent: Mon 3/27/2017 3:57:13 PM
Subject: Meeting at EPA - 3.29.17

Hi Samantha:

I hope you are settling in well in your new role. I wanted to let you know that NAHB's Senior Officers will be meeting with Admin. Pruitt on Wed., March 29th at 3 p.m. I don't know if you would be sitting in on that meeting, but if not, we would be pleased to meet with you immediately thereafter if your schedule permits. Please give me your thoughts when you have a moment.

Best regards,

Jim

JAMES RIZZO EVP, Chief Legal Officer
National Association of Home Builders
1201 15th Street, NW | Washington, DC 20005
d: 202.266.8345 m: 202.494.1365 e: JRizzo@nahb.org w: nahb.org
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To: EOC Documentation[EOC_Documentation@epa.gov]; Jackson, Ryan[jackson.ryan@epa.gov]; Cheatham, Reggie[cheatham.reggie@epa.gov]; Breen, Barry[Breen.Barry@epa.gov]; Bowman, Liz[Bowman.Liz@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Wagner, Kenneth[wagner.kenneth@epa.gov]; Lyons, Troy[lyons.troy@epa.gov]; Greenwalt, Sarah[greenwalt.sarah@epa.gov]; Shapiro, Mike[Shapiro.Mike@epa.gov]; Coleman, Sam[Coleman.Sam@epa.gov]; Gray, David[gray.david@epa.gov]; Edlund, Carl[Edlund.Carl@epa.gov]; Heard, Anne[Heard.Anne@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Rodrigues, Cecil[rodrigues.cecil@epa.gov]; Kelly, Albert[kelly.albert@epa.gov]; Brown, Byron[brown.byron@epa.gov]; otglenn@gmail.com[otglenn@gmail.com]; Dravis, Samantha[dravis.samantha@epa.gov]; Washington, Tiffeny[Washington.Tiffeny@epa.gov]; Simon, Nigel[Simon.Nigel@epa.gov]; Davis, Patrick[davis.patrick@epa.gov]; Brooks, Becky[Brooks.Becky@epa.gov]; Armstead, John A.[Armstead.John@epa.gov]; Melvin, Karen[Melvin.Karen@epa.gov]; Richardson, RobinH[Richardson.RobinH@epa.gov]; Clark, Becki[Clark.Becki@epa.gov]; Forsgren, Lee[Forsgren.Lee@epa.gov]; Indermark, Michele[Indermark.Michele@epa.gov]; Smith, Monica[smith.monica@epa.gov]; Carroll, Craig[Carroll.Craig@epa.gov]; Kling, David[Kling.Dave@epa.gov]; Shaw, Betsy[Shaw.Betsy@epa.gov]; Kavlock, Robert[Kavlock.Robert@epa.gov]; Minoli, Kevin[Minoli.Kevin@epa.gov]; Fotouhi, David[fotouhi.david@epa.gov]; Hill, Franklin[Hill.Franklin@epa.gov]
Cc: Flynn, Mike[Flynn.Mike@epa.gov]; Gross, Bonnie[Gross.bonnie@epa.gov]; Glenn, Onis[glenn.onis@epa.gov]
From: EOC_Deputy_Manager
Sent: Tue 8/29/2017 10:51:55 PM
Subject: AGENDA: Hurricane Harvey: PCC Meeting and Conference Call
Hurricane Harvey Draft Management Objects 083017.docx
Policy Coordinating Committee Agenda 083017.docx

Attached are the Agenda and Draft Incident Management Objectives for discussion and consideration tomorrow. If you have any comments, please send them to EOC_Deputy_Manager@epa.gov and EOC_Manager@epa.gov We will incorporate comments and concerns into the final objectives.

From: EOC_Deputy_Manager
Sent: Monday, August 28, 2017 3:59 PM
To: EOC Documentation; Jackson, Ryan; Cheatham, Reggie; Breen, Barry; Bowman, Liz; Grantham, Nancy; Wagner, Kenneth; Lyons, Troy; Greenwalt, Sarah; Shapiro, Mike; Coleman, Sam; Gray, David; Edlund, Carl; Heard, Anne; Kaplan, Robert; Rodrigues, Cecil; Kelly, Albert; Brown, Byron; otglenn@gmail.com; Dravis, Samantha; Washington, Tiffeny; Simon, Nigel; Davis, Patrick; Brooks, Becky; Armstead, John A.; Melvin, Karen; Richardson, RobinH; Clark, Becki; Forsgren, Lee; Indermark, Michele; Smith, Monica; Carroll, Craig; Kling, David; Shaw, Betsy; Kavlock, Robert; Minoli, Kevin; Fotouhi, David; Hill, Franklin
Cc: Flynn, Mike; Gross, Bonnie; Glenn, Onis
Subject: Hurricane Harvey: PCC Meeting and Conference Call
When: Wednesday, August 30, 2017 12:00 PM-1:00 PM.
Where: DCRoomARNB431/Executive-Conference-Room

Call in: 1 866-299-3188

Access Code: 2025661208

Hurricane/Tropical Storm Harvey Policy Coordinating Committee
Agenda
August 30, 2017

Opening Remarks — Ryan Jackson
Barry Breen

Situational Updates

Region 6
Region 4
OW
OCIR
OPA
OLEM

- HQ EOC activation status
- NRCC FEMA feedback ESF10

National Incident Coordination Team (NICT) Report Out (List of members attached)

- Review PCC Initial Management Objectives

- Emerging Issues from the NICT for PCC consideration
  - Mold management
  - Comprehensive Debris Management Plan Review
  - Health & Safety for environmental concerns
  - Firearms & ammo recovery
  - Plan for demolition of structures containing asbestos & lead
  - Sampling Results timelines for the anticipated matrices we will most likely do
  - Animal carcass disposal support

Holiday Weekend Operational Posture (finalize on Friday)
R6
R4
HQ EOC
NICT
PCC

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: FSAFEDS
Sent: Fri 10/20/2017 7:01:16 AM
Subject: Add More to Your Budget in 2018

View as Webpage

Managing your household budget often seems like a full-time job. Juggling everyday expenses while saving for retirement or college can be difficult. Wouldn't it be nice to add a little extra to your budget?

Estimate Your Savings»

With an FSAFEDS Health Care Flexible Spending Account (HCFSA), you can save up to 30% on thousands of eligible healthcare, prescription, dental, and vision expenses such as:

- Routine physicals or dental cleanings
- Lab costs
- Massage therapy
- Glasses and contact lenses
- Orthodontia

Discover What's Eligible
Learn more about the HCFSA, including **eligible expenses**, **by visiting www.FSAFEDS.com**.

There's less risk of losing funds.
The Health Care FSA also allows you to carry over up to $500 of unused funds into the following year.
Enroll in the FSAFEDS program during **Open Season** and save money in 2018!

Have Questions About Open Season for FSAFEDS?
We're here to help you understand all the benefits and value you can

receive from the FSAFEDS program. Our Benefits Counselors are available Monday through Friday from 9 a.m. to 9 p.m. Eastern Time, excluding holidays.

Get in Touch!

Contact us toll-free at 877-FSAFEDS (372-3337), TTY (Hearing Impaired Line): 866-353-8058.

Sincerely,
The FSAFEDS Team

The Federal Flexible Spending Account Program (FSAFEDS) is sponsored by the U.S. Office of Personnel Management and administered by WageWorks, Inc.

24409
(10/2017)

To: Dravis, Samantha[dravis.samantha@epa.gov]
Cc: Jonathon Lehman[jonathon@americancapitolgroup.com]; Brian Jennings[bjennings@ethanol.org]
From: Brian Jennings
Sent: Thur 10/19/2017 8:15:08 PM
Subject: Smart Sectors Thank you letter & NODA Comments
ACE Smart Sectors Thank You 10.19.17.pdf
ACE 2018 RFS NODA comments 10.19.17.pdf

Samantha,

I hope this finds you doing well. Jonathon Lehman reported back to me that the Smart Sectors kickoff meeting went very well. Thank you for inviting us to take part in Smart Sectors, we really want to be constructive in ensuring it makes for meaningful dialogue and hope that it can prevent setting up tough public battles over RFS/renewable fuels issues in the future.

Attached find a formal thank you letter from us and the comments I just submitted on the RFS NODA.

Please don't hesitate to contact either Jonathon or myself with any questions or concerns.

Brian

Brian Jennings

Executive Vice President

AMERICAN COALITION for ETHANOL

605-334-3381 ext. 12

ethanol.org

To: Marie Sanderson[msanderson@50-state.com]; Dravis, Samantha[dravis.samantha@epa.gov]
From: Viator, Brad
Sent: Tue 10/17/2017 1:57:08 PM
Subject: RE: connecting
EEI Powering Engagement Conference Agenda draft 10.16.17.docx

Samantha,

Here is an agenda with a bit more detail. Let me know what you think and if you'd like to chat through it. But I think this is an opportunity for you guys to talk about your vision in your own words to our entire industry. I know there will be interest from our folks, particularly given recent activity, so I think we allot 20-30 mins of comments from you and 15-20 of discussion.

Thanks.

-Brad

From: Marie Sanderson [mailto:msanderson@50-state.com]
Sent: Monday, October 16, 2017 11:49 AM
To: Dravis, Samantha <dravis.samantha@epa.gov>; Viator, Brad <BViator@eei.org>
Subject: connecting

This email originated from an external sender. Use caution before clicking links or opening attachments. For more information, visit The Grid. Questions? Please contact ITSupport@eei.org or ext. 5100.

Samantha- Please meet Brad Viator from EEI. Brad, Samantha is able to help you on the 25th. Ill let you two connect to chat audience and logistics. Thanks so much,

Marie

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Horton, Melissa H.
Sent: Thur 7/6/2017 5:52:01 PM
Subject: follow up

Hi Samantha. It was great to host everyone today at Alabama Power's Plant Gaston. Thank you for your time!

Might we follow up at your convenience by phone. I'll provide a conference number.

Melissa Horton
Federal Environmental Affairs
Southern Company
205.613.8320 cell
201.261.5014 office

To: Abboud, Michael[abboud.michael@epa.gov]; Adamson, Joseph[adamson.joseph@epa.gov]; Alexander, Geoff[Alexander.Geoff@epa.gov]; Allen, Reginald[Allen.Reginald@epa.gov]; amanda.singleton@erg.com[amanda.singleton@erg.com]; Andrews, Nicolas[andrews.nicolas@epa.gov]; Axelrad, Daniel[Axelrad.Daniel@epa.gov]; Bailey, Kathleen[Bailey.Kathleen@epa.gov]; Bailey, KevinJ[Bailey.KevinJ@epa.gov]; Bangerter, Layne[bangerter.layne@epa.gov]; Barber, Michael[Barber.Michael@epa.gov]; Barbery, Andrea[Barbery.Andrea@epa.gov]; Belle, Kara[Belle.Kara@epa.gov]; Bennett, Tate[Bennett.Tate@epa.gov]; Bertaina, Stephanie[Bertaina.Stephanie@epa.gov]; Bolen, Brittany[bolen.brittany@epa.gov]; Bowles, Jack[Bowles.Jack@epa.gov]; Bowles, Scott[Bowles.Scott@epa.gov]; Bowman, Liz[Bowman.Liz@epa.gov]; Boyd, Rory[Boyd.Rory@epa.gov]; Brooks, Lisette[Brooks.Lisette@epa.gov]; Brown, Byron[brown.byron@epa.gov]; Brown, Caroline[Brown.Caroline@epa.gov]; Brown, Margot[Brown.Margot@epa.gov]; Burton, Tamika[burton.tamika@epa.gov]; Byrd, Darlene[Byrd.Darlene@epa.gov]; Cain, Yvonne[Cain.Yvonne@epa.gov]; Campbell, Jennie[Campbell.Jennie@epa.gov]; Cannon, Rob[cannon.rob@epa.gov]; Carpenter, Thomas[Carpenter.Thomas@epa.gov]; Carroll, Carly[Carroll.Carly@epa.gov]; Catanzarite, Nicole[Catanzarite.Nicole@epa.gov]; Chmielewski, Kevin[chmielewski.kevin@epa.gov]; Clark, Renee[Clark.Renee@epa.gov]; Coopwood, Theodore[Coopwood.Theodore@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Cory, Preston (Katherine)[Cory.Preston@epa.gov]; Cunningham, Laticia[Cunningham.Laticia@epa.gov]; Curtis, Mellasonda[Curtis.Mellasonda@epa.gov]; Daguillard, Robert[Daguillard.Robert@epa.gov]; Dalbey, Matthew[Dalbey.Matthew@epa.gov]; Darden, Cynthia[Darden.Cynthia@epa.gov]; Davis, Gail[Davis.Gail@epa.gov]; Debell, Kevin[debell.kevin@epa.gov]; Dennis, Norwood[Dennis.Norwood@epa.gov]; Dent, Bridgette[Dent.Bridgette@epa.gov]; Desautels, Lynn[Desautels.Lynn@epa.gov]; Dewey, Amy[Dewey.Amy@epa.gov]; Dickerson, Aaron[dickerson.aaron@epa.gov]; Dickerson, Tom[Dickerson.Tom@epa.gov]; Dravis, Samantha[dravis.samantha@epa.gov]; Dulka, Kelly[Dulka.Kelly@epa.gov]; Durham, Natalie[Durham.Natalie@epa.gov]; Durrant, Patricia[Durrant.Patricia@epa.gov]; Eades, Cassaundra T.[eades.cassaundra2@usepa.onmicrosoft.com]; Elman, Barry[Elman.Barry@epa.gov]; Euling, Susan[Euling.Susan@epa.gov]; Evans, DavidA[Evans.DavidA@epa.gov]; Farber, Glenn[Farber.Glenn@epa.gov]; Farren, Victor[Farren.Victor@epa.gov]; Fendley, Ed[Fendley.Ed@epa.gov]; Ferguson, Donovan[ferguson.donovan@epa.gov]; Ferguson, Lincoln[ferguson.lincoln@epa.gov]; Ferris, Lena[Ferris.Lena@epa.gov]; Figueroa, Zaida[Figueroa.Zaida@epa.gov]; Fisher-Durrah, Ann[Fisher-Durrah.Ann@epa.gov]; Flynn, Mike[Flynn.Mike@epa.gov]; Foos, Brenda[Foos.Brenda@epa.gov]; Foster, John[Foster.John@epa.gov]; Fraser, Scott[Fraser.Scott@epa.gov]; Freire, JP[Freire.JP@epa.gov]; Gaines, Cynthia[Gaines.Cynthia@epa.gov]; Gentile, Laura[Gentile.Laura@epa.gov]; Germann, Sandy[Germann.Sandy@epa.gov]; Gilbreath, Jan[Gilbreath.Jan@epa.gov]; Giolitti, Alia[giolitti.alia@epa.gov]; Goldring, Sharquita[Goldring.Sharquita@epa.gov]; Golightly-Howell, Velveta[Golightly-Howell.Velveta@epa.gov]; Goodman, Iris[Goodman.Iris@epa.gov]; Graham, Amy[graham.amy@epa.gov]; Gray, Doris[Gray.Doris@epa.gov]; Green-Goldsborough, Kimberly[Green-Goldsborough.Kimberly@epa.gov]; Greenwalt, Sarah[greenwalt.sarah@epa.gov]; Griffiths, Charles[Griffiths.Charles@epa.gov]; Grossarth, Shari[Grossarth.Shari@epa.gov]; Guignet, Dennis[Guignet.Dennis@epa.gov]; Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]; Gurkin, Charles[Gurkin.Charles@epa.gov]; Hamilton, Luctrician[Hamilton.Luctrician@epa.gov]; Hannon, Arnita[Hannon.Arnita@epa.gov]; Hart, Daniel[Hart.Daniel@epa.gov]; Healey, Emily[healey.emily@epa.gov]; Heffelfinger, John[Heffelfinger.John@epa.gov]; Hernandez-Pleitez, Kevin[hernandez-pleitez.kevin@epa.gov]; Hewitt, James[hewitt.james@epa.gov]; Hill-Hammond, Shaunta[Hill-Hammond.Shaunta@epa.gov]; Hope, Brian[Hope.Brian@epa.gov]; Howard, James[Howard.James@epa.gov]; Howell, William[howell.william@epa.gov]; Hull, George[Hull.George@epa.gov]; Hupp, Millan[hupp.millan@epa.gov]; Hutch, Dan[Hutch.Dan@epa.gov]; Inge, Carolyn[Inge.Carolyn@epa.gov]; Irving, Verna[Irving.Verna@epa.gov]; Jackson, Ryan[jackson.ryan@epa.gov]; Jenkins, Donna[Jenkins.Donna@epa.gov]; Jenkins, Robin[Jenkins.Robin@epa.gov]; Johnson, Ann[Johnson.Ann@epa.gov]; Johnson, Anna[johnson.anna@epa.gov]; Johnson, Melissa[Johnson.Melissa@epa.gov]; Johnston, Khanna[Johnston.Khanna@epa.gov]; Jones, Enesta[Jones.Enesta@epa.gov]; Jutras, Nathaniel[Jutras.Nathaniel@epa.gov]; Kackar, Adhir[Kackar.Adhir@epa.gov]; Keene,

Matt[Keene.Matt@epa.gov]; Kelly, Albert[kelly.albert@epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Knutson, Matthew[knutson.matthew@epa.gov]; Konkus, John[konkus.john@epa.gov]; Kopits, Elizabeth[Kopits.Elizabeth@epa.gov]; Kramer, Melissa[Kramer.Melissa@epa.gov]; Kung, Megan[Kung.Megan@epa.gov]; Lancaster, Tina[Lancaster.Tina@epa.gov]; Leavy, Jacqueline[Leavy.Jacqueline@epa.gov]; Leimenstoll, William[leimenstoll.william@epa.gov]; Lesperance, Twanna[Lesperance.Twanna@epa.gov]; Letendre, Daisy[letendre.daisy@epa.gov]; Livingston, Keith[Livingston.Keith@epa.gov]; Lopez, George[lopez.george@epa.gov]; Loving, Wanda[Loving.Wanda@epa.gov]; Lyons, Troy[lyons.troy@epa.gov]; Mabson, Michelle[Mabson.Michelle@epa.gov]; MacKinnon, Kathleen[MacKinnon.Kathleen@epa.gov]; Malashock, Daniel[malashock.daniel@epa.gov]; Mandolia, Michelle[Mandolia.Michelle@epa.gov]; Mason, Sheryl[Mason.Sheryl@epa.gov]; Massey, Matt[Massey.Matt@epa.gov]; Matthews, Demond[matthews.demond@epa.gov]; Mccain, Bassie[Mccain.Bassie@epa.gov]; McCluney, Lance[McCluney.Lance@epa.gov]; McGartland, Al[McGartland.Al@epa.gov]; McMurray, Forrest[mcmurray.forrest@epa.gov]; Milbourn, Cathy[Milbourn.Cathy@epa.gov]; Miles, Ramona[Miles.Ramona@epa.gov]; Miles-McLean, Stuart[Miles-Mclean.Stuart@epa.gov]; Mitchell, Miranda[mitchell.miranda@epa.gov]; Moody, Christina[Moody.Christina@epa.gov]; Moore, Chris[Moore.Chris@epa.gov]; Morris, Stephanie[Morris.Stephanie@epa.gov]; Munoz, Charles[munoz.charles@epa.gov]; Nagelhout, Peter[Nagelhout.Peter@epa.gov]; Newbold, Steve[Newbold.Steve@epa.gov]; Newell, Florence[newell.florence@epa.gov]; Newton, Jonathan[Newton.Jonathan@epa.gov]; Nickerson, William[Nickerson.William@epa.gov]; Okeefe, Erin[OKeefe.Erin@epa.gov]; Osinski, Michael[Osinski.Michael@epa.gov]; Paige, Carolyn[Paige.Carolyn@epa.gov]; Pennino, Kara[pennino.kara@epa.gov]; Peppins, Felicia[Peppins.Felicia@epa.gov]; Poole, Laura[Poole.Laura@epa.gov]; Reed, Khesha[Reed.Khesha@epa.gov]; Reeder, John[Reeder.John@epa.gov]; Rees, Sarah[rees.sarah@epa.gov]; Richardson, RobinH[Richardson.RobinH@epa.gov]; Robinson, JeffreyL[robinson.jeffreyl@epa.gov]; Sachs, Robert[Sachs.Robert@epa.gov]; Salvador, Brenda[Salvador.Brenda@epa.gov]; Scott-Forte, Londa[Scott-Forte.Londa@epa.gov]; Selia, Emily[Selia.Emily@epa.gov]; Shadbegian, Ron[Shadbegian.Ron@epa.gov]; Shallal, Suhair[Shallal.Suhair@epa.gov]; Shaw, Nena[Shaw.Nena@epa.gov]; Siddiqi, Sana[Siddiqi.Sana@epa.gov]; So, Katherine[so.katherine@epa.gov]; Somerville, Phillip[Somerville.Phillip@epa.gov]; Sorokin, Nicholas[sorokin.nicholas@epa.gov]; Sparacino, Jessica[sparacino.jessica@epa.gov]; StClair, Christie[StClair.Christie@epa.gov]; Sugiyama, George[sugiyama.george@epa.gov]; Taylor, Brian[Taylor.Brian@epa.gov]; Thomas, John V.[Thomas.John@epa.gov]; Thomas, Tammy[Thomas.Tammy@epa.gov]; Thompson, Elnora[Thompson.Elnora@epa.gov]; Timmons, Natasha[timmons.natasha@epa.gov]; Torma, Tim[Torma.Tim@epa.gov]; Tyler, Tom[Tyler.Tom@epa.gov]; Valentine, Julia[Valentine.Julia@epa.gov]; VanAkkeren, Brett[VanAkkeren.Brett@epa.gov]; Vance, Eric[Vance.Eric@epa.gov]; VanLare, Paula[VanLare.Paula@epa.gov]; Wade, James[Wade.James@epa.gov]; Walker, Sherri[Walker.Sherri@epa.gov]; Washington, Reggie[Washington.Reggie@epa.gov]; Washington, Stephanie[Washington.Stephanie@epa.gov]; Washington, Valerie[Washington.Valerie@epa.gov]; Watson, Yvonne[Watson.Yvonne@epa.gov]; Weaver, Venus[Weaver.Venus@epa.gov]; Wheeler, William[Wheeler.William@epa.gov]; Widener, Charles (Chuck)[Widener.Charles@epa.gov]; Wilcox, Jahan[wilcox.jahan@epa.gov]; Wiley, Ronald[Wiley.Ronald@epa.gov]; Williams, Steven[Williams.Steven@epa.gov]; Willis, Sharnett[Willis.Sharnett@epa.gov]; Wingo-Huntley, Deloris[Wingo-Huntley.Deloris@epa.gov]; Young, James T.[Young.James-T@epa.gov]; Zawlocki, Chris[Zawlocki.Chris@epa.gov]; Adams, Darryl[Adams.Darryl@epa.gov]; Bright, Wanda[Bright.Wanda@epa.gov]; Carlson, Rachel[Carlson.Rachel@epa.gov]; Coviello, Nancy[Coviello.Nancy@epa.gov]; Darwin, Henry[darwin.henry@epa.gov]; Falvo, Nicholas[falvo.nicholas@epa.gov]; Ferris, Ann[Ferris.Ann@epa.gov]; Jenkins, Patricia[Jenkins.Patricia@epa.gov]; Jones, Denean[Jones.Denean@epa.gov]; No, Fredrick[No.Fredrick@epa.gov]; Norwood, Lamont[Norwood.Lamont@epa.gov]; Parrish, Cayce[Parrish.Cayce@epa.gov]; Teplitzky, Andy[Teplitzky.Andy@epa.gov]; Tropp, Kristin[Tropp.Kristin@epa.gov]; White, Candace[White.Candace@epa.gov]; Whittington, Paula[Whittington.Paula@epa.gov]; Williams, Glenda[Williams.Glenda@epa.gov]; Williams, Veronika[Williams.Veronika@epa.gov]; Woodward, Cheryl[Woodward.Cheryl@epa.gov]; Wright,

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Cc: Benton, Michael[benton.michael@epa.gov]; Twillman, Brian[Twillman.Brian@epa.gov]; Howard, James[Howard.James@epa.gov]; McCluney, Lance[McCluney.Lance@epa.gov]
From: Aiyegoro, Ganiat
Sent: Tue 8/8/2017 6:31:37 PM
Subject: ACTION DUE 08/31/2017 --> Incomplete FY17 information Security Awareness Training

DUE DATE: Thursday, 08/31/2017

CONTACT/TELEPHONE #: Ganiat Aiyegoro 566-1798 / James Howard 564-0407

AFFECTED OFFICES: OA-Everyone

OUTCOME: INFORMATION SECURITY IS EVERYONE'S RESPONSIBILITIES!!!
Help EPA reach 100%

PURPOSE: This is a reminder that the mandatory FY17 Information Security Awareness Training deadline is August 31, 2017. OA is at 40% complete. Help OA reach 100% completion before the deadline. If anyone on your staff has not completed the training, please encourage them to complete the training as soon as possible. **If the training is not completed by August 31, 2017, their access to the network will be disabled.**

INSTRUCTIONS: (eLearning website:) http://workplace.epa.gov/elearning.html

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Ganiat A. Aiyegoro

IT Specialist

Office of Administrative and Executive Services

Office of the Administrator
Desk: 202-566-1798

Cell: 202-251-6488

To: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]; Bolen, Brittany[bolen.brittany@epa.gov]; Dravis, Samantha[dravis.samantha@epa.gov]
From: Williams, Brendan
Sent: Mon 6/19/2017 4:02:40 PM
Subject: Cellulosic and Advanced RIN Generation to Date
20170616 D3 RIN Estimate Cases.xlsx

I hope you all are doing well. I wanted to share the below and attached information to provide insight into RIN generation to date relating to the cellulosic and advanced categories, as well as the implications of the figures for both this year's RIN market and next year's RVO. I used EPA data on RIN generation to date to develop the attached spreadsheet. Here's the EMTS link for quick reference if you want to look at the source in conjunction with the spreadsheet:

https://www.epa.gov/fuels-registration-reporting-and-compliance-help/2017-renewable-fuel-standard-data

Here is a topline summary of everything in this note:

- **Data shows that D3 RIN generation (cellulosic) is likely to hit only 206.971 million this year.** In an extremely optimistic case, where you use the highest monthly RIN generation from last year, D3 generation only nets out to be 286.133. Both figures **fall short of the 311 million gallons required for this year**. In light of this reality, targets higher for next year would be extremely problematic.

- **D5 RIN generation is on pace to be only about 74.6 million gallons, with an upper limit in an extremely optimistic case of 158 million gallons. This is WELL short of the 1.28 billion RINs that will need to be generated** above and beyond the biodiesel mandate. Since there are no Brazilian ethanol cargoes currently scheduled due to even higher costs, this has the effect of de facto significantly increasing the biodiesel mandate, which is very costly since the domestic industry is only on track to produce 1.57 billion gallons this year. This domestic production figure means we'll need at least 745 million gallons of foreign biodiesel to comply. This was not the intent of the program.

  - The anti-dumping/countervailing duties petition before the Department of Commerce, which seeks to impose significantly higher costs on foreign biodiesel, would create even more problems given the gap between what is mandated and domestic production.

  - Given these realities, higher targets for next year, or even maintaining this year's figures moving forward, would be extremely problematic.

MORE DETAIL:

Cellulosic RIN generation NOT on pace to meet the 2017 requirement.

For more detail, the first tab on the spreadsheet estimates potential 2017 RIN generation using an averaging methodology. Historically, D3 RIN generation is really high in December and really low in January. To correct for this, rather than using the very low January 2017 RIN generation data, I averaged December 2016 and January 2017. I used that number (15.5 million) for the January and December value respectively. Then I took average monthly RIN generation number (again, using a corrected figure for January) and plugged it in for each month for the rest of the year, except December, where I again used the December/January correction figure. This results in only 206.971 million RINs generated, more than one hundred million FEWER gallons than the 2017 requirement. (NOTE: If I used actual January generation, this number would be millions of gallons LOWER.)

The second tab looks at the pace of RIN generation by month (e.g. how much RIN generation has increased each month) with the January/December correction and extends the trend throughout the year. This method yields only 254.4 million cellulosic RINs, which is more than 60 million gallons short of the 2017 requirement.

The third tab looks at RIN generation to date, with the January/December correction, and then plugs the highest RIN generation month from last year (December) into each month for the rest of the year. This is the most extremely overly optimistic case one could develop and it still yields only 286.133 million RINs.

Bottom line is that it is extremely hard to justify not LOWERING the cellulosic targets for 2018, since even the most optimistic assessment on this year falls short of the 2017 requirement.

Note that all cellulosic RIN generation is from biogas too, NOT cellulosic ethanol. POET and DuPont have indicated their plants will only produce a few million gallons of cellulosic ethanol each, well short of their 25 and 30 million gallon nameplate capacity respectively.

Advanced Biofuel

-

The D5 category doesn't have the same January/December anomaly as D3, so using a straight averaging or trend analysis are the easiest paths to take for projection purposes. Using these methodologies, the projected range for non-biomass based diesel advanced biofuel (again, based on RIN generation thus far) is between about 86 and 158 million gallons. This is well short of the extra 1.28 billion RINs that will be needed to fulfill the advanced mandate (when you consider the mandate will require generating 3 billion biodiesel RINs from the 2 billion gallons mandated given the 1.5X weight of BBD RINs). More realistic projections based on actual RIN generation, rather than my averaging and "high optimism" methods described above, indicated only 74.6 million gallons of non-biomass based diesel D5 RINs will be generated, primarily given the fact that there are no Brazilian ethanol cargoes currently scheduled, since that fuel is uneconomic at this time (even though the RIN market is currently bullish). I'm happy to send a spreadsheet with these figures too.

Thus, increasing the advanced number only serves to de facto substantially boost the biodiesel mandate. Since we are only on track to produce 1.57 billion gallons of biodiesel (or 2.335 billion RINs), this means we will need a LOT more foreign biodiesel to comply with the program. As mentioned above, the anti-dumping/countervailing duties petition complicates this further. This certainly was not the intent of the program.

Let me know if you have any questions.

Regards,

Brendan Williams

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To: Dravis, Samantha[dravis.samantha@epa.gov]
Cc: Kime, Robin[Kime.Robin@epa.gov]; Inge, Carolyn[Inge.Carolyn@epa.gov]
From: Amanda France
Sent: Thur 8/24/2017 3:53:52 PM
Subject: Meeting with Kent Lassman, CEI

Samantha,

CEI president Kent Lassman would appreciate getting together with you for coffee or a meeting at your convenience. Please let me know if one of the following dates fits your schedule, when's best:

Tuesday, Oct 29 2:00 on

Thursday, Oct 31 flexible

Friday, Sept 8 before 12:00

Wednesday, Sept 13 flexible

Thank you,

Amanda France

Executive Assistant, Competitive Enterprise Institute

Program Manager, Alfred E. Kahn Discussion Series

Producer, *I, Whiskey: The Human Spirit*

202.331.2764

To: Pritchard, Eileen[Pritchard.Eileen@epa.gov]; Snyder, Brett[Snyder.Brett@epa.gov]; Thomas, John V.[Thomas.John@epa.gov]; Campbell, Jennie[Campbell.Jennie@epa.gov]; McGartland, Al[McGartland.Al@epa.gov]; Dalbey, Matthew[Dalbey.Matthew@epa.gov]; Shaw, Nena[Shaw.Nena@epa.gov]; Corrales, Mark[Corrales.Mark@epa.gov]; Owens, Nicole[Owens.Nicole@epa.gov]; Bowen, Jennifer[Bowen.Jennifer@epa.gov]; Tyler, Tom[Tyler.Tom@epa.gov]; Kumar, Chitra[Kumar.Chitra@epa.gov]; Wilson, Clark[Wilson.Clark@epa.gov]; Derkasch, Patricia[Derkasch.Patricia@epa.gov]; Brown, Cheryl R.[Brown.CherylR@epa.gov]; Kok, Nancy[Kok.Nancy@epa.gov]; Kenny, Shannon[Kenny.Shannon@epa.gov]; Dravis, Samantha[dravis.samantha@epa.gov]
Cc: Rogers, Barbara[Rogers.Barbara@epa.gov]
From: Rogers, Barbara
Sent: Thur 10/12/2017 11:56:44 AM
Subject: Rogers, Barbara has invited you to 'Office of Policy'

Good morning--

FYI, the Office of Policy FY2017 Utilization Report as of 10/5/2017 for your view in SharePoint.

Go to Office of Policy

Follow this site to get updates in your newsfeed.



Get the SharePoint mobile app!



To: Owens, James (OST)[James.Owens@dot.gov]; Harris, Jeffrey M. EOP/OMB[Jeffrey.M.Harris@omb.eop.gov]; Palmieri, Rosario A. EOP/OMB[rpalmieri@omb.eop.gov]; Moran, John S. EOP/WHO[John.S.Moran@who.eop.gov]; Neumayr, Mary B. EOP/CEQ[Mary.B.Neumayr@ceq.eop.gov]; Dravis, Samantha[dravis.samantha@epa.gov]; Bolen, Brittany[bolen.brittany@epa.gov]; Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]; Baptist, Erik[baptist.erik@epa.gov]; Szabo, Aaron L. EOP/CEQ[Aaron.L.Szabo@ceq.eop.gov]; Catanzaro, Michael J. EOP/WHO[Michael.J.Catanzaro@who.eop.gov]; Wehrum, Bill[Wehrum.Bill@epa.gov]; mharrington@NADA.org[mharrington@NADA.org]; dgreenhaus@nada.org[dgreenhaus@nada.org]; akoblenz@nada.org[akoblenz@nada.org]
From: Delahoyde, Magdelana A. EOP/WHO
Sent: Wed 11/29/2017 7:26:00 PM
Subject: Meeting to discuss CAFE-GHG standards

Hi All,

We've had a scheduling conflict come up for the CAFE-GHG meeting at 11am tomorrow morning.

The new time will be 10:30am on Friday morning, but wanted to double check that works for everyone before I sent the update. A conference call line can be set up as well.

Does 10:30am work on Friday morning? Please let me know!

Maggie

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Pete Flores
Sent: Thur 7/6/2017 4:53:58 PM
Subject: Help Protect Refiners Jobs-Changing the "Point of Obligation"

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS in a way that fixes this inequity.

Thank you.

Pete Flores
21395 Bradner
Luckey, Ohio 43443

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Carrie-Lee Early
Sent: Sat 9/9/2017 7:31:25 PM
Subject: checking in again re networking coffee

Hi Samantha,
Just touching base again.

Thanks Samantha.

Carrie-Lee

To: Dravis, Samantha[dravis.samantha@epa.gov]; Bolen, Brittany[bolen.brittany@epa.gov]
From: Todd Myers
Sent: Wed 6/28/2017 6:07:12 PM
Subject: Nice to Meet You

It was nice to meet you last week and discuss your priorities for policy changes at EPA.

As I mentioned, I am a member of the Puget Sound Salmon Recovery Council in Seattle and in the previous administration, EPA added needless delay and cost when setting grant priorities. I'd like to chat with you or the appropriate person about this at the appropriate time.

Thanks again for meeting and let me know how I can help you make EPA less intrusive and more effective.

Todd Myers

Environmental Director | Washington Policy Center

(206) 963-3409 | tmyers@washingtonpolicy.org

www.washingtonpolicy.org | @WAPolicyGreen

"You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete." - *Buckminster Fuller*

To: Stephen Fotis[scf@vnf.com]
Cc: Warner, Elizabeth[elizabeth.warner@santeecooper.com]; Brown, Byron[brown.byron@epa.gov]; Dravis, Samantha[dravis.samantha@epa.gov]
From: Greenwalt, Sarah
Sent: Tue 7/25/2017 3:23:40 PM
Subject: Re: [EXTERNAL SENDER] RE: Call

Sam, sorry for the confusion, but this call at 11 was to discuss something raised at our meeting the other day, not CCR. I think Stephen will be working to set up a separate call on CCR with you and Byron.

Sent from my iPhone

On Jul 25, 2017, at 11:04 AM, Stephen Fotis <scf@vnf.com> wrote:

> That is fine. Why don't you call my number – 202 298-1908.
>
> Stephen
>
> Stephen Fotis
>
> Partner
> Van Ness Feldman LLP
> scf@vnf.com
> (202) 298-1908
>
> This communication may contain information and/or metadata that is legally privileged, confidential or exempt from disclosure. If you are not the intended recipient, please do not read or review the content and/or metadata and do not disseminate, distribute or copy this communication. Anyone who receives this message in error should notify the sender immediately by telephone (202-298-1800) or by return e-mail and delete it from his or her computer.
>
> **From:** Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
> **Sent:** Tuesday, July 25, 2017 11:02 AM
> **To:** Warner, Elizabeth
> **Cc:** Stephen Fotis; Brown, Byron; Dravis, Samantha
> **Subject:** Re: [EXTERNAL SENDER] RE: Call

I am running a few minutes behind at another meeting. Sorry, if you'll give me 5 minutes that would be great.

Sent from my iPhone

On Jul 24, 2017, at 6:49 PM, Warner, Elizabeth <elizabeth.warner@santeecooper.com> wrote:

> Sarah,
>
> 11 a.m. suits Stephen and me. Should we call your office?
>
> Thanks also for the opportunity to talk with Byron and Samantha. Stephen is coordinating getting in touch with them quickly to share information.
>
> Thanks,
>
> Babs
>
> Elizabeth Henry Warner
>
> Vice President Legal Services and
>
> Corporate Secretary
>
> Santee Cooper
>
> (843) 761-7044
>
> ehwarner@santeecooper.com

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From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Monday, July 24, 2017 6:08 PM
To: Warner, Elizabeth
Cc: Stephen Fotis; Brown, Byron; Dravis, Samantha
Subject: [EXTERNAL SENDER] RE: Call

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Thank you Elizabeth! It was a very productive meeting. I'm cc'ing Byron Brown and Samantha Dravis who are very familiar with CCR. If you would please communicate to them what you were sharing with the Administrator today, that would be very helpful.

As of now, I'm free from 11-11:30 and 3:00-3:45 to discuss the other.

Thanks!

Sarah A. Greenwalt

Senior Advisor to the Administrator

for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency

Work: 202-564-1722|Cell: 202-816-1388

Greenwalt.Sarah@epa.gov

From: Warner, Elizabeth [mailto:elizabeth.warner@santeecooper.com]
Sent: Monday, July 24, 2017 2:09 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Stephen Fotis <scf@vnf.com>

Subject: Call

Sarah,

Very nice to meet you today. Thanks for all the work you have been doing on water issues for EPA. Stephen Fotis and I are available for a call re ELG anytime tomorrow. Stephen is very familiar with the issues we discussed. We look forward to hearing from you.

Thanks,

Babs

Elizabeth Henry Warner

Vice President Legal Services and

Corporate Secretary

Santee Cooper

(843) 761-7044

ehwarner@santeecooper.com

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To: Philip Swanson (Affiliate)[philip.swanson@un.org]
Cc: Dravis, Samantha[dravis.samantha@epa.gov]; Gunning, Paul[Gunning.Paul@epa.gov]; Pryor, Justin[Pryor.Justin@epa.gov]; Cerqueira, Julie[CerqueiraJ@state.gov]; John Ale[John_Ale@SWN.COM]; Sarah Battisti[Sarah_Battisti@SWN.COM]; Roy Hartstein[Roy_Hartstein@SWN.COM]; Paul Geiger[Paul_Geiger@SWN.COM]; Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
From: Fiji George
Sent: Mon 12/4/2017 5:35:02 PM
Subject: SWN Letter of Withdrawal from the CCAC-OGMP
SWN Withdrawal Letter from OGMP12042017.pdf

Phil,

Please find our letter of withdrawal from the OGMP.

Thank you,

Fiji George
Director, Strategic Solutions

Tel: 832-796-2891
Mobile: 281.770.1744
Email: fiji.george@swn.com

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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Adam J White
Sent: Tue 8/8/2017 5:18:54 PM
Subject: New policy paper on EPA settlements

FYI: "Ending the EPA's Billion-Dollar Green Energy Rip-Off: How Agency Regulators Leverage the Courts to Create their own "Power of the Purse"
https://cei.org/sites/default/files/William%20Yeatman%20-%20Ending%20the%20EPA%2527s%20Billion-Dollar%20Green%20Energy%20Rip-Off.pdf

To: Dravis, Samantha[dravis.samantha@epa.gov]
Cc: Idrovo, Jennifer[Jennifer.Idrovo@americanbar.org]
From: Landis-Marinello, Kyle
Sent: Mon 6/19/2017 1:59:46 PM
Subject: RE: 25th Fall Conference- Speaker Confirmation

Ms. Dravis,

Just to follow-up, although I know you already cleared this, it sounds as though the ABA needs an email back from you confirming that you can speak at this conference on October 20, at 2:15pm, and that the following info is correct (I took a stab at filling in the details—but please correct anything in here):

First Name: Samantha

Last Name: Dravis

Badge Name: Samantha Dravis

Title: Associate Administrator

Organization: EPA Office of Policy

Address: USEPA Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N. W.

Mail Code: 1804A

City, State, Zip Code: Washington, DC 20460

Phone Number: 202-564-4332

Email Address: dravis.samantha@epa.gov

If you can let Jen (cc'd here) and I know if this is correct, that would be great. Thanks!

-Kyle

From: Idrovo, Jennifer [mailto:Jennifer.Idrovo@americanbar.org]
Sent: Monday, May 15, 2017 11:18 AM
To: dravis.samantha@epa.gov
Cc: Landis-Marinello, Kyle <kyle.landis-marinello@vermont.gov>
Subject: 25th Fall Conference- Speaker Confirmation

Dear Samantha:

Thank you for agreeing to share your knowledge and expertise at the **25th Fall Conference** to be held **October 18-20, 2017**, at the **Baltimore Marriott Waterfront** in **Baltimore, Maryland**. This Section strives to be the premier forum and community for dialogues about the challenges in environmental, energy and resources law. We appreciate your participation in this national conference.

The details of your presentation are below:

Date: Friday, October 20, 2017

Time: 2:15pm - 3:45pm

Topic: Who's In Charge? The Evolving Role of Tribal, State, and Local Governments in Environmental, Energy, and Resources Regulation and Enforcement

Contact Information

Your contact information will appear as is in the brochure, onsite schedule, program webpage, and speaker/moderator biography page unless changes are indicated. **Please reply to this email to APPROVE or provide changes to your contact information by Thursday, May 18, 2017.**

First Name: Samantha

Last Name: Darvis

Badge Name:

Title:

Organization:

Address:

City, State, Zip Code:

Phone Number:

Email Address: dravis.samantha@epa.gov

Speaker/Moderator Responsibilities

Your speaker responsibilities for the program are outlined on the following link:
---

https://www.americanbar.org/content/ebus/events/2017/25th-fall-conference/speakers.html

Due Dates and Milestones:
Please work with your moderator to prepare a publication-quality paper in accordance with the following due dates and milestones:

Contact information confirmed by

Thursday, May 18, 2017

Submit Speaker Release Form, Biography, and Electronic Photo
Friday, July 21, 2017

Draft Abstract/Paper due to Moderator
Wednesday, September 13, 2017

Final Abstract/Paper Submission due to Program Assistant
Thursday, September 28, 2017

See you in Baltimore, MD!
October 18-20, 2017

Registration

Speakers are invited to attend the meeting free of charge on the day of their panel presentation only and will be registered internally by ABA staff. If you are planning to attend the entire conference, we have developed a special rate of $450. Please complete the attached registration form and return to:

American Bar Association

ATTN: Service Center–Meeting/Event

Registrations Department

321 N. Clark St., Floor 16

Chicago, IL 60654

SECURE FAX: (312) 988-5850

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Jennifer Idrovo

Program Assistant

Section of Environment, Energy, and Resources

American Bar Association | 321 N. Clark Street | Chicago, IL 60654

T: (312) 988-5625 | F: (312) 988-5572

Jennifer.Idrovo@americanbar.org

www.americanbar.org/environ



To: Dravis, Samantha[dravis.samantha@epa.gov]
Cc: PolicyOffice[PolicyOffice@epa.gov]; Bolen, Brittany[bolen.brittany@epa.gov]
From: Richard Gupton
Sent: Thur 8/24/2017 12:48:23 PM
Subject: EPA General Duty Clause Enforcement Action

Ms. Dravis

I work for the Agricultural Retailers Association (ARA), which represents the nation's agricultural retailer and distributors. I am reaching out to you to see if you and other Senior EPA officials, including Administrator Pruitt, would be available to meet with a group of trade associations to discuss the General Duty Clause, as codified in section 112(r)(1) of the Clean Air Act. We support President Trump's Executive Order to initiate a regulatory reform task force and believe there is a need to properly clarify the intent and scope of the General Duty Clause.

The trade associations that are part of this coalition include ARA, American Fuel & Petrochemical Manufacturers, Corn Refiners Association, Institute of Makers of Explosives, International Liquid Terminals Association, National Association of Chemical Distributors, and National Oilseed Processors Association.

In recent years, EPA has increasingly used the General Duty Clause to impose substantial penalties on facilities, often in situations unrelated to "addressing preventable hazards to public health and the environment"[1]. As there exists no rule underpinning the implementation of the General Duty Clause, including its relationship to Risk Management Program (RMP) regulatory obligations, industry is left in an uncertain and untenable position. Industry needs greater certainty to know how compliance with the Clause is measured and when compliance has been achieved.

Thank you for your review and consideration of this request! I look forward to hearing from you.

Best regards,

Richard

Richard Gupton

Senior Vice President, Public Policy & Counsel

Agricultural Retailers Association

Suppliers to America's Farmers

1156 15th Street, NW | Suite 500 | Washington, D.C. 20005

Direct: 202.595.1699 | Main: 202.457.0825 | Fax: 202.457.0864

richard@aradc.org

www.aradc.org

Connect on Ag Retail Exchange, the ARA online community.

Save the Date
ARA Conference & Expo >> November 27-30, 2017
Arizona Biltmore: A Waldorf Astoria Resort >> Phoenix, Arizona.

---

[1] Risk Management Plan Rule: Summary and Response to Comments, Volume 1, Pg. 32-1, May 24, 1996

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: National Geographic
Sent: Wed 11/29/2017 6:35:00 PM
Subject: Get the Facts: Forum on Ocean Conservation

Recap: 10/18 Forum on Ocean Conservation

No Images?

On October 18, 2017, National Geographic Society President and CEO Gary E. Knell hosted the Forum on Ocean Conservation, the second forum event in our Mapping the World Public Policy Dialogue. The event featured a conversation between National Geographic Explorer-in-Residence and leader of the Society's Pristine Seas project Dr. Enric Sala and Co-Chair of the bipartisan Senate Oceans Caucus Senator Sheldon Whitehouse of Rhode Island.

Click the button below for a recap of the facts shared by Dr. Sala and Senator Whitehouse about the dangers facing the ocean today and to learn more about how National Geographic and the federal government are confronting these issues.

We hope you will continue to be part of the conversation on the critical issues facing our world today by joining us for our upcoming Forum on Antiquities Preservation – stay tuned for more information! We would also like to take this time to again offer National Geographic as a resource to you as you continue your work to better protect our world's oceans.

Have any additional questions? Reply to this email or reach out to us via our facts and resources page contact form, and we will do our best to connect you with any applicable resources.

GET THE #MAPPINGTHEWORLD FACTS

Wednesday, May 3, 2017

GET THE FACTS

Wednesday, October 18, 2017

LEARN MORE

Details to Come

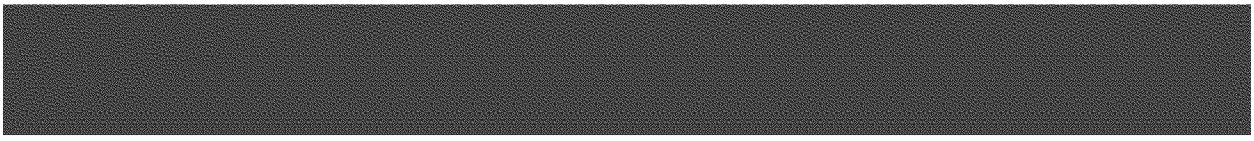
Think your colleagues would like to join the next event? Please email us at info@natgeoforums.org.



National Geographic

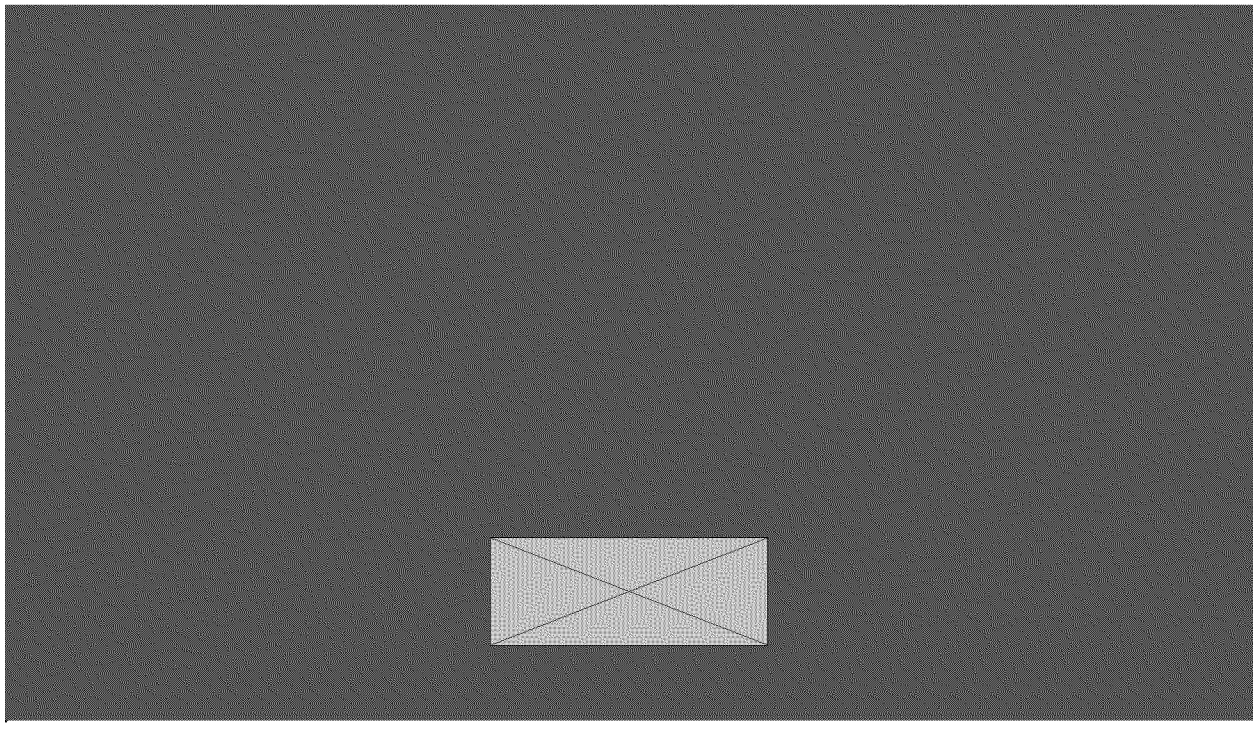
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To: Dravis, Samantha[dravis.samantha@epa.gov]
From: ECOS
Sent: Fri 9/29/2017 6:15:02 PM
Subject: ECOS Touts Cooperative Federalism Benefits, Presents Innovation Award, Provides WOTUS Input, & More









To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Erlin Moritz
Sent: Thur 7/6/2017 4:33:33 PM
Subject: Help Protect Refiners Jobs-Changing the "Point of Obligation"

Samantha Dravis,

The time is now to help prevent a massive loss of good-paying American jobs. The EPA currently implements the Renewable Fuel Standard in a way that makes all U.S. refiners responsible for ensuring that certain levels of renewable fuels are blended into gasoline, even if they do not have capabilities to do such blending.

This nonsensical set-up allows large integrated oil companies that blend more fuel than they refine and big convenience store gasoline chains (who do much of the blending) to collect valuable credits for the renewable fuel they blend into the pure gasoline they get from refineries. Independent refiners, who do little or no blending themselves, then end up purchasing those credits in order to demonstrate compliance with a process they have little control over. Small and independent refiners are at risk of going offline due to this backwards regulation, with 75,000-150,000 U.S. workers potentially impacted.

Please, help save our jobs and make this right. Please move the point of obligation for the RFS in a way that fixes this inequity.

Thank you.

Erlin Moritz
PO Box 641
Pemberville, Ohio 43450

To: Dravis, Samantha[dravis.samantha@epa.gov]; bolen.brittany@epa.org[bolen.brittany@epa.org]
Cc: Clarke, Jeff[jclarke@ngvamerica.org]; Cunningham, Allison[ACunningham@ngvamerica.org]
From: Lacey, Pam
Sent: Wed 6/28/2017 6:03:30 PM
Subject: Follow up meeting re: AGA and NGVA Regulatory Reform Comments (EPA-HQ-OA-2017-0190)
AGA 05 15 2017 Comments on EPA Rule Review Docket EPA-HQ-OA-2017-0190.pdf
NGVA EPA Regulatory Review May 2017 Final.pdf

Dear Ms. Dravis and Ms. Bolen:

The American Gas Association (AGA) and Natural Gas Vehicles of America (NGVA) would like to arrange a follow-up meeting with you to discuss our ideas for regulatory reform, as described in our attached comments, filed May 15, 2017 in Docket EPA-HQ-OA-2017. NGVA General Counsel Jeffrey Clarke and NGVA Federal Government Affairs Director Allison Cunningham and I would like to meet with you and your team in July.

We are available anytime on Thursday July 14, the afternoon of Friday July 15, and anytime in the week of July 17-21 (other than 10:30 am – 1 pm on July 19 and 20. Please let me know what date and time you would prefer.

Respectfully,

Pamela A. Lacey | Chief Regulatory Counsel

American Gas Association

400 N. Capitol St., NW | Washington, DC | 20001

P: 202-824-7340 | M: 202-809-6565 | F: 202-824-9190 | placey@aga.org

The American Gas Association represents more than 200 local energy companies committed to the safe and reliable delivery of clean natural gas to more than 69 million customers throughout the nation.

To: Greenwalt, Sarah[greenwalt.sarah@epa.gov]; Warner, Elizabeth[elizabeth.warner@santeecooper.com]
Cc: Brown, Byron[brown.byron@epa.gov]; Dravis, Samantha[dravis.samantha@epa.gov]
From: Stephen Fotis
Sent: Tue 7/25/2017 3:03:53 PM
Subject: RE: [EXTERNAL SENDER] RE: Call

That is fine. Why don't you call my number – 202 298-1908.

Stephen

Stephen Fotis

Partner
Van Ness Feldman LLP
scf@vnf.com
(202) 298-1908

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From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Tuesday, July 25, 2017 11:02 AM
To: Warner, Elizabeth
Cc: Stephen Fotis; Brown, Byron; Dravis, Samantha
Subject: Re: [EXTERNAL SENDER] RE: Call

I am running a few minutes behind at another meeting. Sorry, if you'll give me 5 minutes that would be great.

Sent from my iPhone

On Jul 24, 2017, at 6:49 PM, Warner, Elizabeth <elizabeth.warner@santeecooper.com> wrote:

Sarah,

11 a.m. suits Stephen and me. Should we call your office?

Thanks also for the opportunity to talk with Byron and Samantha. Stephen is coordinating getting in touch with them quickly to share information.

Thanks,

Babs

Elizabeth Henry Warner

Vice President Legal Services and

Corporate Secretary

Santee Cooper

(843) 761-7044

ehwarner@santeecooper.com

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From: Greenwalt, Sarah [mailto:greenwalt.sarah@epa.gov]
Sent: Monday, July 24, 2017 6:08 PM
To: Warner, Elizabeth
Cc: Stephen Fotis; Brown, Byron; Dravis, Samantha
Subject: [EXTERNAL SENDER] RE: Call

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Thank you Elizabeth! It was a very productive meeting. I'm cc'ing Byron Brown and Samantha Dravis who are very familiar with CCR. If you would please communicate to them what you were sharing with the Administrator today, that would be very helpful.

As of now, I'm free from 11-11:30 and 3:00-3:45 to discuss the other.

Thanks!

Sarah A. Greenwalt

Senior Advisor to the Administrator

for Water and Cross-Cutting Issues

U.S. Environmental Protection Agency

Work: 202-564-1722|Cell: 202-816-1388

Greenwalt.Sarah@epa.gov

From: Warner, Elizabeth [mailto:elizabeth.warner@santeecooper.com]
Sent: Monday, July 24, 2017 2:09 PM
To: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Cc: Stephen Fotis <scf@vnf.com>
Subject: Call

Sarah,

Very nice to meet you today. Thanks for all the work you have been doing on water issues for EPA. Stephen Fotis and I are available for a call re ELG anytime tomorrow. Stephen is very familiar with the issues we discussed. We look forward to hearing from you.

Thanks,

Babs

Elizabeth Henry Warner

Vice President Legal Services and

Corporate Secretary

Santee Cooper

(843) 761-7044

ehwarner@santeecooper.com

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To: Bolen, Brittany[bolen.brittany@epa.gov]; lovell.will@epa.gov[lovell.will@epa.gov]
Cc: Dravis, Samantha[dravis.samantha@epa.gov]; Paul Narog[pfnarog@mmm.com]; Tom Geier[tgeier@mmm.com]
From: John Metzger
Sent: Mon 6/19/2017 1:51:27 PM
Subject: 3M's Meeting with EPA's Office of Policy, June 16, 2017

Brittany and Will: Thank you for meeting with Paul Narog, Tom Geier and me on Friday, June 16. Please also extend our appreciation to Samantha Dravis who was unavailable.

During Friday's meeting, we discussed the following three items that were part of 3M's response to U.S. EPA's Request for Comment, regarding "Evaluation of Existing Regulations," in accordance with Executive Order 13777. 82 Fed. Reg. 17793 (Apr. 13, 2017).

Research and Development (R&D) Exemption for New Source Performance Standards (NSPS) U.S. EPA should add an exemption for R&D operations to the NSPS' for web coating lines at 40 C.F.R. Part 60, Subparts RR, TT, FFF, & VVV, thereby clarifying that the rules were never intended to apply to R&D operations. Subparts TT & VVV, in particular, virtually prevent most forms of R&D. Both rules require emission controls (or the use of compliant coatings, which is generally incompatible with the needs of R&D) for even the smallest of R&D lines, rendering them economically infeasible. And neither of the two rules' background documents address R&D in any way—rather, EPA based the rules' applicability and control requirements entirely on full-sized production lines. Finally, we discussed that all of the web coating maximum achievable control technology (MACT) rules at 40 C.F.R. Part 63, many of which apply to the same lines that are subject to the web coating NSPS rules, directly exempt R&D operations.

EPA would likely need to revise—that is, a formal rule-making—the above-noted NSPS rules to add an R&D exemption. An efficient approach, however, might be to include these changes in EPA's upcoming rule-making for the residual risk and technology review (in accordance with Sections 112(f)(2) & 112(d)(6) of the Clean Air Act) of related web coating MACT rules (e.g., for 40 C.F.R. Part 63, Subpart JJJJ). Note that EPA has previously revised a number of related NSPS rules as part of its residual risk and technology review of a MACT rule. *See* 80 Fed. Reg. 75178 (Dec. 1, 2105) for EPA's revision of the NSPS rules at 40 C.F.R. Part 60, Subparts J & Ja as part of its residual risk and technology review of the refinery MACT at 40 C.F.R. Part 63, Subpart CC.

Streamlining of MACT & NSPS Rules for Web Coating Lines. U.S. EPA should promulgate a rule that facilities can optionally meet in lieu of any of eight (8) separate web coating rules codified at 40 C.F.R. Parts 60 & 63. Web coating is a manufacturing technology for making products across many industrial categories. Some coating lines are subject to no more than one of the eight rules; but many lines are subject to multiple rules simultaneously, or are subject to changing combinations of the eight rules from day-to-day depending on the product being manufactured. An optional rule would for many facilities reduce the cost, complexity, and redundancy of having to manage their lines against eight potentially applicable rules

Flexible Air Permits with Advanced Approval of Manufacturing Changes. U.S. EPA should

promote and directly facilitate issuance of air quality permits that "advance-approve" manufacturing changes. Facilities having this type of permit can make qualifying manufacturing changes within only days of submitting a notification to the permitting authority, rather than within months (sometimes more than a year) generally involved under traditional permitting programs. No additional rule-making is required to re-energize and expand this underutilized approach—these permits are based on the "Flexible Air Permitting Rule" at 74 Fed. Reg. 51418 (Oct. 6, 2009).

Thank you, again, for meeting with us and considering our input on these important subjects. We would be pleased to provide additional information, or work directly with U.S. EPA, as might be helpful to move these subjects forward. You may reach me at any time at jfmetzger@mmm.com or at 651-336-7139.

Best regards,

3M Science. Applied to Life.™

John F. Metzger, P.E. | Sr. Environmental Specialist
3M Environment, Health and Safety
3M Center, 224-5W-03 | St. Paul, MN 55144-1000
Office: 651 737 3580
jfmetzger@mmm.com | www.3M.com

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Munoz, Darrin R.
Sent: Thur 8/24/2017 12:18:51 PM
Subject: Carbon Neutrality

Hello Samantha,

Not sure if you're the correct person to contact on this, but it was my understanding EPA is currently undertaking efforts in putting out a policy statement on carbon neutrality. Do you know where that is in the process? Thank you.

Darrin R. Munoz
Director
darrin.munoz@FaegreBD.com Download vCard
D: +1 202 312 7468

Faegre Baker Daniels LLP
1050 K Street NW | Suite 400 | Washington, DC 20001, USA

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Patrick Schnell
Sent: Wed 10/11/2017 8:55:11 PM
Subject: your job

Hello Samantha Dravis.

I don't know you. But I know that you are working for the EPA. Or rather, you are working for Pruitt. Which one is it, actually? Obviously you cannot work for both, the EPA and Pruitt. I would imagine you are either someone who is frustrated with the fact that the EPA is being dismantled, or you are one of the dismantlers. At this point you must be one of the dismantlers, since you are on staff working for Pruitt.

Therefore I am asking you: How can you do what you are doing and look the citizens of the world, let alone your children, in the eyes? How can you work towards destroying their future and then come home and pretend that nothing bad happened? How can you live with destroying all of our environment and call this your job, actually collect money for it, tax payers' money, no less?

You know exactly what you are doing. Therefore you disgust me. There is no excuse. Nothing can excuse what you are doing, unless you openly opposed, undermine, and sabotage Pruitt.

One day, when climate change has become even more intolerable and for the poor, for those stranded in the wrong place, for those without the means to relocate or flee some of the catastrophes caused by climate change, you may consider how your past actions contributed to the suffering.

It will no longer make a difference. You are then the criminal that you are now working towards becoming. Go ahead. You are almost there.

Sincerely,

Patrick Schnell, M.D.

The New York Times reported that EPA Administrator Scott Pruitt has filled his schedule almost exclusively with meetings and fancy dinners with coal-mining, chemical company and others EPA regulates—often followed by moves to deregulate them—while scheduling almost no meetings with environmental groups. Pruitt has also spent $25,000 in taxpayer money to put a soundproof phone booth in his office, raising red flags about why this was necessary.

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Nick Owens
Sent: Sat 6/17/2017 9:45:31 PM
Subject: RE: Possible brief meeting later today (Mercuria Energy CEO)

Samantha, I appreciate you and Peter (Mercuria's Americas CEO had to travel back Thursday evening...will definitely coordinate with you soon to see when will be a good time to meet. Enjoy your weekend.
nick

On Jun 15, 2017 10:47 AM, "Dravis, Samantha" <dravis.samantha@epa.gov> wrote:

Hey Nick, are they available tomorrow? I have conflicts at that time.

From: Nick Owens [mailto:owensn@gmail.com]
Sent: Thursday, June 15, 2017 10:21 AM
To: Dravis, Samantha <dravis.samantha@epa.gov>
Subject: Possible brief meeting later today (Mercuria Energy CEO)

Hi Samantha:

I wanted to circle back with you to see if you may have about 30 minutes later today (between 3:45-530pm) to meet Peter Sherk, Americas CEO for Mercuria Energy Group. Mercuria has significant investments in Oklahoma and Colorado with increasing investment in the US.

This week, we have had meetings with leadership of other departments and White House. I Mercuria had a keen interest in visiting with the EPA.

Below are a few quick key facts on Mercuria. Attached is biography information.

Thank you for your consideration.

All the best,

Nick

202-507-3834 m

[Mercuria Energy Group]

-Daniel Jaeggi - Founder

(World's Largest Crude Oil Trader)

-Purchased JP Morgan Chase commodities unit

-Transacted first export of American crude to China

-Finding more way to make America an energy exporter and making China the consumer

-Employs 1,000 US; revenues $100 Billion

Global HQ: Geneva, Switzerland

US Operations HQ: Houston TX

Significant operations in Oklahoma and Colorado

To: Dravis, Samantha[dravis.samantha@epa.gov]
From: Khary Cauthen
Sent: Wed 6/28/2017 5:05:59 PM
Subject: Re:

Great to see you too. Will you be at the doe event tomorrow?

Sent from my iPhone

On Jun 28, 2017, at 11:32 AM, Dravis, Samantha <dravis.samantha@epa.gov> wrote:

> Hi Khary,
>
> It was nice seeing you and Jack today! Let me know if you'd like to do a follow up call on some of the items we discussed this morning with the Administrator.
>
> Best,
>
> Samantha